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Employment and Immigration Canada

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NATIONAL OCCUPATIONAL CLASSIFICATION

OCCUPATIONAL DESCRIPTIONS

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NATIONAL OCCUPATIONAL CLASSIFICATION

OCCUPATIONAL DESCRIPTIONS

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Introduction

Background

The National Occupational Classification (NOC) is a systematic taxonomy of occupations in the Canadian labour market. It is based on extensive occupational research, analysis and consultation conducted across the country.

The NOC is intended for use in compiling, analyzing and communicating information about occupations. Occupational information is of critical importance for employment equity, human resource planning, occupational supply and demand analysis, the provision of labour market and career information, and other programs and services.

The NOC replaces Canada's previous occupational classification systems, the Canadian Classification and Dictionary of Occupations (CCDO) and the closely-related 1980 Standard Occupational Classification (SOC) of Statistics Canada. The NOC presents a new structure for analyzing and understanding the labour market and reflects occupational changes that have taken place over the past two decades. It also addresses problems with the CCDO that became evident when it was used for economic analysis. For example, in the NOC, occupations that encompass a wide range of skill levels are not classified together in the same unit group as they are in the CCDO.

For more information on the occupational analysis undertaken to develop the NOC, readers may refer to the section on methodology in the Introduction.

The Structure of the NOC

The NOC is a three-tiered hierarchical arrangement of occupational groups:

26 Major Groups

- Each major group has a unique two-digit code number and is composed of one or more minor groups.

139 Minor Groups

- Each minor group has a unique three-digit code number and is composed of one or more unit groups. The first two digits of this code indicate the major group to which the minor group belongs.

522 Unit Groups

- Each unit group has a unique four-digit code. The first three digits of this code indicate the minor and major groups to which the unit group belongs.

A number of occupational titles are classified within each unit group. Occupational titles classified in the same unit group are <u>not</u> assigned different sub-codes; they share the same four-digit unit group code. The NOC does not have an aggregation level below that of the unit group.

In all, there are approximately 25,000 occupational titles included in the NOC. Some titles are clearly "occupations", such as *librarian* and *chef*, while others are "specializations", such as *music librarian* and *pastry chef*. Still others represent a range of jobs, such as *furniture assembler* and *sawmill machine operator*.

NOC Classification Criteria

The two major attributes of jobs which were used as classification criteria in developing the NOC were *skill level* and *skill type*. Other factors, such as industry and occupational mobility, were also taken into consideration.

Skill Level

Skill level is defined generally as the amount and type of education and training required to enter and perform the duties of an occupation. In determining skill level, the experience required for entry and the complexity and responsibilities typical of an occupation were also considered in relation to other occupations.

Four skill level categories are identified in the NOC. Each minor and unit group is assigned to one of the skill levels. The skill level categories are outlined and defined in a chart that follows.

The skill level categories are broad aggregates, reflecting four commonly accepted entry routes for employment. Requirements for individual unit groups or occupations may overlap between the boundaries of the skill levels. For example, some occupations can be entered with either a university degree or a college diploma. When the entry requirements for a unit group or occupation are mixed, the skill level placement of the group has been made by considering the requirements most generally demanded by employers, the minor group context, trends in hiring requirements, as well as further training and specialization acquired on-the-job.

The classification describes the educational and training requirements for *occupations*. However, the education and experience of particular job incumbants may not correspond exactly to the level described. Persons may be over-qualified for their work or they may work in occupations for which the entry requirements have changed after they became employed.

It is important to note that the skill level categories are not intended to designate socio-economic status or prestige. Rather they are

NOC SKILL LEVEL CRITERIA

	EDUCATION/TRAINING	OTHER
SKILL LEVEL A	• University degree (bachelor's, master's or post-graduate)	
SKILL LEVEL B	• Two to three years of post-secondary education at community college, institute of technology or CEGEP *or* • Two to four years of apprenticeship training *or* • Three to four years of secondary school and more than two years of on-the-job training, training courses or specific work experience	• Occupations with supervisory responsibilities are assigned to skill level B. • Occupations with significant health and safety responsibilities (e.g., fire fighters, police officers and registered nursing assistants) are assigned to skill level B.
SKILL LEVEL C	• One to four years of secondary school education • Up to two years of on-the-job training, training courses or specific work experience	
SKILL LEVEL D	• Up to two years of secondary school and short work demonstration or on-the-job training	

intended to reflect actual occupational entry requirements.

Management occupations are not assigned to a skill level category because factors other than education and training (e.g., previous experience, capital) are often more significant determinants for employment.

Skill Type

Skill type is defined generally as the type of work performed, although other factors related to skill type are also reflected in the NOC. One of these factors is similarity with respect to the educational field of study required for entry into an occupation. Another factor is the industry of employment where experience within an internal job ladder or within an industry is usually a prerequisite for entry.

Ten broad occupational categories, based on skill type, are identified in the NOC:

0. Management Occupations

This skill type category contains legislators, senior management occupations and middle and other management occupations.

1. Business, Finance and Administration

This category contains occupations that are concerned with supervising and providing financial and business services, administrative and regulatory services and clerical support services. Some occupations in this category are unique to financial and business service industries; most are found in all industries.

Often, occupations at skill levels A and B are supplied from educational programs specific to the profession or occupation. Some occupations at skill level B are also supplied from experienced workers in related clerical occupations.

2. Natural and Applied Sciences and Related Occupations

This category contains professional and technical occupations in the sciences, including physical and life sciences, engineering and architecture.

Occupations in this skill type category require post-secondary education in an appropriate scientific discipline. Progression from occupations in skill level B to occupations in skill level A is not usually possible without completion of additional formal education.

3. Health Occupations

This category includes occupations concerned with providing health care services directly to patients and occupations that provide support to professional and technical staff.

Most occupations in this skill type category require post-secondary education in a related health care program. Progression from occupations in skill level B to occupations in skill level A is not usually possible without completion of additional formal education. Occupations is still level C require short training programs

4. Occupations in Social Science, Education, Government Service and Religion

This skill type category includes a range of occupations that are concerned with law, teaching, counselling, conducting social science research, developing government policy and administering government and other programs.

Occupations in this skill type category usually require completion of a related post-secondary program. Progression from occupations in skill level B to occupations in skill level A is not usually possible without completion of additional formal education.

5. Occupations in Art, Culture, Recreation and Sport

This skill type category includes professional and technical occupations related to art and culture, including the performing arts, film and video, broadcasting, journalism, writing, creative design, libraries and museums. It also includes occupations in recreation and sport.

This category is characterized by occupations which are linked by subject matter to formal post-secondary education programs but which have, for the most part, a range of acceptable qualifications. Occupations in this category are also characterized by a requirement for creative talent, such as for designers and performers, or for athletic ability. Unit groups which contain occupations for which university graduation in a professional discipline is usually required, such as journalism or library science, have been classified in skill level A. Most others have been classified in skill level B in recognition of the wide range of entry routes that are possible.

6. Sales and Service

This skill type category contains sales occupations, personal and protective service occupations and occupations related to the hospitality and tourism industries.

Occupations in skill level B of this category can be linked, for the most part, to formal post-secondary or apprenticeship training programs. Others are characterized by periods of formal on-the-job training other than apprenticeship. Progression from occupations in skill level C or D to those in skill level B usually requires completion of a related training program. Some progression through experience is possible for supervisory positions.

7. Trades, Transport and Equipment Operators and Related Occupations

This skill type category includes construction and mechanical trades, trades supervisors and contractors and operators of transportation and heavy equipment. These occupations are found in a wide range of industrial sectors, with many occuring in the construction and transportation industries.

This category includes most of the apprenticeable trades, including all of those related to the construction industry. Other occupations in this category usually require completion of college or other programs combined with on-the-job training. Progression to supervisory or self-employed contractor status is possible. There is little mobility among occupations in this category due to specific apprenticeship, training and licensing requirements for most occupations.

8. Occupations Unique to Primary Industry

This category contains non-technical occupations in mining, oil and gas production, forestry and logging, agriculture, horticulture and fishing.

Most occupations in this category are industry-specific and do not occur outside of the primary industries. While some occupations in skill level B require completion of college or other training programs, most are characterized by on-the-job training and progression through experience.

9. Occupations Unique to Processing, Manufacturing and Utilities

This category contains supervisory and production occupations in manufacturing, processing and utilities.

Occupations in this category are characterized by internal progression and on-the-job training. Workers typically enter these occupations at an entry level (such as labourer or helper) and progress to increasingly higher skilled occupations through experience. Mobility between employers or industries may be limited by seniority provisions of collective agreements. The occupations in skill level B of this category are increasingly technical in nature and post-secondary training links have been developed for some.

Industry

"Industry" and "occupation" are separate variables which can be cross-tabulated to provide detailed information on employment. However, many occupations are usually found within a particular industry. For example, miners and automobile assemblers are occupations that tend to occur almost entirely within single industrial sectors.

During the research and development of the NOC, it was realized that in many industries, occupational mobility is determined more by internal job ladders than by "functional specialization". In consequence, some unit groups include workers of a particular skill level within one industry. Although the occupational breakdown resembles in part an industrial breakdown, the variables remain separate and distinct.

Industry was used in the development of classification categories for senior management occupations, for occupations unique to primary industry and for occupations in manufacturing, processing and utilities.

Occupational Mobility

In developing the NOC, an effort was made to consider mobility between occupations. The objective was to develop unit groups where the potential for mobility or substitution of workers would be greater within the group than between groups. Movement within groups usually follows when the group is homogeneous in skill level and skill type. Movement between groups usually reflects a change in skill level (e.g., vertical mobility) or a change in skill type (e.g., acquisition of a new specialized skill).

The actual amount of occupational mobility that exists for unit groups varies. Many unit group descriptions include a statement that indicates the type and amount of mobility that characterizes the unit group.

Other Classification Considerations

In addition to the previously mentioned criteria, other factors were considered in determining the boundaries between unit groups and the contents of each group. These additional factors were the size of the unit groups and the "codeability" or operational feasibility of the groups.

The size (or estimated number of workers) of the unit group was considered for reasons of statistical reliability and confidentiality. Generally, unit groups which would contain fewer than 1,000 Canadian workers have not been delineated.

Because the NOC will be used to code responses to the census and other surveys, it must provide a set of unit groups that can be used for this operational application. The insufficient precision of some survey responses and ambiguities of language were given consideration in finalizing the unit groups.

The NOC Matrix

A matrix classifying the NOC minor groups has been developed to provide an overview of the entire classification and to show the organization of the groups by both skill level and skill type.

The matrix is found inside the front cover of this publication.

The horizontal rows of the matrix correspond to the four skill level categories. The vertical columns of the matrix correspond to nine skill type categories. The tenth skill type category, management, is organized across the top of the matrix. Within each cell of the matrix, the minor groups that belong to each skill level and skill type category are listed.

Usually, each cell of the matrix constitutes an NOC major group. For example, the eight minor groups listed in the matrix cell for *Skill Level D* and *Sales and Service* combine to form major group 66 - *Elemental Sales and Service Occupations.*

Issues and Conventions of the NOC

Some of the many issues that were encountered in the development of the NOC and the conventions adopted in response are discussed in the following paragraphs.

Management Occupations

Management occupations present a special problem for reliable coding of occupational survey responses. In many cases there is little indication of the level of responsibility, the size of

the enterprise or division managed or the field of specialization.

To be of practical use, a classification of managers must be a compromise between the theoretically optimal and the practical solutions.

Senior management occupations (in major group 00) have been divided on the basis of industry of employment into five unit groups. The breakdown has been made according to the Standard Industrial Classification (SIC).

Middle and Other Management Occupations are divided into 16 minor groups and 39 unit groups on the basis of specialization (e.g., *Purchasing Managers*) or industry of employment (e.g., *Postal and Courier Services Managers*). In certain cases (e.g., *Transportation Managers)* groups defined by industry also contain managers in that specialization regardless of their industry of employment. The breakdown by industry can be correlated to groupings of the SIC.

Management occupations have not been assigned to a skill level category. It is recognized that there is a range of acceptable education or training requirements for managerial occupations.

Supervisors

Supervisors and foremen/women have generally been classified in Skill Level B.

In most cases, professional and technical occupations are supervised by managerial or professional personnel respectively. However, where supervisors are identified for professional and technical groups, they are usually classified in the same unit groups as the occupations supervised. One exception has been made for Head Nurses, who are classified in a separate unit group due to the large number of persons employed in this occupation.

Supervisors in the following occupational categories have been classified in supervisory unit groups or minor groups separate from the workers supervised:

- clerical and administrative occupations
- sales and service occupations
- trades and transport and equipment operators
- occupations in primary industry
- occupations unique to processing, manufacturing and utilities.

Most minor and unit groups in the occupational categories listed above have a corresponding supervisory group. Occasionally, as in Minor Group 626 *Police Officers and Firefighters*, supervision is provided by managers and there is no corresponding supervisory group in Major Group 62.

Trades

All apprenticeable trades are included in Skill Level B. Their inclusion does not imply an exact equivalence of skill between all trades, but rather that they occupy a range that lies within the boundaries of this skill level category. Information on entry requirements are provided within each unit group description.

Inspectors, Testers and Graders

Generally, inspectors who require post-secondary education have been classified in separate unit groups in Skill Level B or with technicians and technologists, also in Skill Level B. Other non-technical inspectors, testers, graders and samplers have been included either in separate unit groups within the minor groups covering occupations in processing industries, such as metal processing and textiles, or within unit groups of assemblers and fabricators in other manufacturing industries. This is reflective of patterns of employment found within industries and of the increasing responsibility for quality control being placed on manufacturing production workers.

Apprentices and Trainees

Apprentices and trainees have been classified in the same unit groups as the occupations for which they are training. Similarly, interns and articling students are classified with their respective professional groups.

This convention has been adopted of necessity to prevent a large proliferation of unit groups of apprentices. It is not intended to imply equivalence or interchangeability of apprentices or trainees with fully qualified workers.

NOC Coding System

One of the features of the National Occupational Classification is its system of codes. Each major group, minor group and unit group has its own unique code.

A two-digit code is assigned at the major group level. A third digit is added at the minor group level and a fourth digit is added at the unit group level.

Major Group *31* - Professional Occupations in Health

Minor Group *314* - Professional Occupations in Therapy and Assessment

Unit Group *3142* - Physiotherapists

The first two digits of each code convey meaning with respect to the group's skill type and skill level category.

For all non-management occupations, the **first digit** of each code identifies the major, minor and unit group as belonging to one of the **skill type** categories.

Similarly, for all non-management occupations, the **second digit** of each code identifies the major, minor and unit group as belonging to one of the four **skill level** categories.

For management occupations, the first two digits also convey meaning. However, the order of meaning is reversed. That is, for management occupations, the first digit is always "0" to convey management, while the *second* digit conveys the skill type category.

When the first digit is 1	***...the Skill Type Category is***
1	Business, Finance and Administrative Occupations
2	Natural and Applied Sciences and Related Occupations
3	Health Occupations
4	Occupations in Social Science, Education, Government Service and Religion
5	Occupations in Art, Culture, Recreation and Sport
6	Sales and Service Occupations
7	Trades, Transport and Equipment Operators and Related Occupations
8	Occupations Unique to Primary Industry
9	Occupations Unique to Processing, Manufacturing and Utilities
When the second digit is 1	***...the Skill Level Category is***
2 or 3	Skill Level A (Professional Occupations)
4 or 5	Skill Level B (Technical, Paraprofessional and Skilled Occupations)
6	Skill Level C (Intermediate Occupations)
	Skill Level D (Labouring and Elemental Occupations)

* * * * * * * * * * *

Important Note: This applies to all occupations except management occupations. For management, the first digit is "0" and the second digit represents the skill type categories, from 1 to 9, as above.

Examples of Codes and Their Meanings

1st digit indicates skill type category 9
Occupations Unique to Processing, Manufacturing and Utilities

9231

2nd digit indicates skill level category B

1st digit indicates skill type category 6
Sales and Service Occupations

6443

2nd digit indicates skill level category C

1st digit indicates management occupation
(Always 0 for management occupations)

0212

2nd digit indicates skill type category 2
Natural and Applied Sciences and Related Occupations

Format of Unit Group Descriptions

Each NOC unit group description consists of several sections which define and describe its content.

Lead statement

This section provides a general description of the content and boundaries of the unit group and usually indicates the main activities of occupations within the unit group. It also indicates the kinds of industries or establishments in which the occupations are found. The list of places of employment is not always exhaustive, but can assist in clarifying the occupations described and in differentiating them from occupations found in other groups.

Examples of titles classified in this unit group

This section is a list of commonly occurring occupational titles. The titles are intended to illustrate the contents and range of the unit group. This is not an exhaustive list of titles; additional occupational titles are included in the alphabetical index of titles.

Main duties

This section describes the main duties of occupations in the unit group. Depending on the contents of the unit group, one of three formats was selected for describing main duties:

- A series of statements that can be applied to all occupations in the unit group. This format was selected for unit groups that contain a single "core" occupation, such as *2146 Mining Engineers* and *1242 Legal Secretaries*. This format was also selected for unit groups that contain a range of related titles that nevertheless share a set of common duties, such as *9512 Forging Machine Operators* and *1441 Administrative Clerks*.
- Two to four sub-sets of occupations with a series of statements that apply to each component. This format was selected for unit groups that consist of two or more sub-components which, while similar enough to be in the same unit group, can be described separately. Examples of unit groups with this format are *3141 Audiologists and Speech-Language Pathologists* and *5125 Translators, Terminologists and Interpreters*.
- A series of brief descriptive statements that are linked to some specific occupations. This format was selected for unit groups that contain a series of occupations which, while similar enough to be in the same unit group, can be described separately. Examples of unit groups with this format include

6463 By-law Enforcement and Other Regulatory Officers, n.e.c. and *5226 Other Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts.*

For some unit groups, a statement appears in italics at the end of this section which identifies specializations that exist within the occupation.

Employment requirements

This section describes the employment requirements for the unit group. Several types of requirements are identified in this section and are listed in the following order:

- Type and level of education (for example, secondary school, college diploma, university degree). Efforts were made to be as specific as possible, though many unit groups have a range of acceptable education requirements.
- Specific training (for example, apprenticeship training, on-the-job training, internal training courses)
- Experience in another occupation (for example, supervisors usually require several years of experience in the occupation that they supervise)
- Licences, certificates or registration
- Other requirements (for example, athletic ability or artistic talent).

This section does **not** attempt to describe personal suitability requirements or other factors that are assessed by employers as part of the hiring process.

Some occupations have very definite employment requirements while for others, there is no concensus or there may exist a range of acceptable requirements. To reflect this variation in the labour market, this section describes employment requirements using the following terminology:

- "*... is required*" (to indicate a definite requirement)
- "*... is usually required*" (to indicate something that is usually, but not always, required by employers)
- "*... may be required*" (to indicate something that may be required by some employers, but on a less frequent basis). In some provinces, it may also include music conservatories, bible schools and colleges of fisheries and other non-degree granting institutions.

Note: For reasons of brevity, in this section the term "college" includes the following types of post-secondary institutions: community colleges, CÉGEPS, technical institutes, and agricultural colleges. In some provinces it may also include music conservatories, bible schools, colleges of fisheries and other non-degree granting institutions.

Additional information

This section appears in some unit group descriptions. It provides information on the following:

- progression to other occupations (such as supervisory or management positions)
- mobility patterns (for example, identifying occupations that are part of internal lines of progression)
- trends and forthcoming changes in the unit group's employment requirements
- other information to clarify and define the unit group.

Classified elsewhere

This section clarifies the boundaries of the unit group by identifying other unit groups or occupations that are classified elsewhere. Unit groups or individual occupations are cited in this section when they bear a functional similarity to the unit group or when similar titles occur.

Concordances

A conversion table relating the 7-digit codes of the CCDO to the unit groups of the NOC is available. It may be obtained in either text or electronic form by contacting:

Occupational Systems
Employment and Immigration Canada
Place du Portage, Phase IV, 5th floor
Ottawa/Hull
K1A 0J9
Fax: (819) 994-0202

Concordances between the NOC and the 1980 SOC will be provided separately by Statistics Canada.

Career Guidance Version of the NOC

A career guidance version of the NOC is under development and will form the basis for career exploration materials. It is scheduled to be available in Spring, 1994. This publication will include occupational descriptors and ratings for factors such as physical activities, environmental conditions, aptitudes and interests.

Relationship Between the NOC and the Standard Occupational Classification 1991

The NOC forms the basis of the Standard Occupational Classification (SOC) 1991 which is used by Statistics Canada to report data on occupations from the Census and other surveys.

Small differences exist between the two classifications at the unit group level. These occur in areas where Employment and Immigration Canada recognizes occupational distinctions that Statistics Canada could not implement due to the nature of Census responses.

In total, sixteen NOC unit groups, consisting of eight related pairs, have been collapsed to form eight groups in the 1991 SOC. These sixteen unit groups are clearly identified in the NOC structure. As well, their descriptions include a statement that they are collapsed in data provided by Statistics Canada. The titles and codes of the collapsed groups indicate the minor group in which the data will be reported by Statistics Canada. To assist users of labour market data to readily identify these cases, the "combined" versions of these unit groups have been assigned a code ending in "0".

The NOC and the SOC also differ in their classification of military personnel. The NOC unit groups for military occupations (0643 *Commissioned Officers, Armed Forces* and 6464 *Occupations Unique to the Armed Forces*) are defined to include only those military personnel whose occupations do not have a civilian counterpart (e.g., infantry officers, artillery soldiers). Those military personnel whose occupations do have a civilian counterpart are classified in the unit group appropriate to the occupation (e.g., dental officers are classified with dentists and military police officers are classified with police officers). On the other hand, all military personnel, regardless of whether their occupations have civilian counterparts, are classified to the corresponding SOC unit groups: *Commissioned Officers, Armed Forces* and *Other Ranks, Armed Forces.*

The minor groups and broad occupational categories of the 1991 SOC are the same as those of the NOC, except to the extent of the variations created by the differences in the unit groups and the treatment of the military.

The major group level of the 1991 SOC differs from that of the NOC and consists of 47 major groups based on skill type.

As the 1991 SOC has different major groups, the classification is structured differently from the NOC.

For the minor groups and unit groups of the 1991 SOC, a two-part numbering system has been adopted. The first part of the numbering system indicates the place of the minor and unit groups within the SOC structure, and the second part of the numbering system carries the NOC code. This two-part numbering system will allow users to relate data produced by Statistics Canada to the minor and unit groups of the NOC.

Further information about the Standard Occupational Classification 1991, can be obtained from

Standards Division
Statistics Canada
8 D8 Jean Talon Building
Ottawa, Ontario
K1A 0T6
Tel. (613) 951-8576

and

Labour and Household Surveys Analysis Division
Statistics Canada
5 B7 Jean Talon Building
Ottawa, Ontario
K1A 0T6
Tel. (613) 951-6890

NOC Unit Groups	SOC 1991 Counterparts *
0211 Engineering Managers 0212 Architecture and Science Managers	0210 Engineering, Science and Architecture Mangers
0721 Facility Operation Managers 0722 Maintenance Managers	0720 Facility Operation and Maintenance Managers
2231 Civil Engineering Technologists and Technicians 2234 Construction Estimators	2230 Civil Engineering Technologists and Technicians and Construction Estimators
3223 Dental Technicians 3412 Dental Laboratory Bench Workers	3220 Dental Technicians and Laboratory Bench Workers
4164 Social Policy Researchers, Consultants and Program Officers 4165 Health Policy Researchers, Consultants and Program Officers	4160 Health and Social Policy Researchers, Consultants and Program Officers
4214 Early Childhood Educators 6473 Early Childhood Educator Assistants	6470 Early Childhood Educators and Assistants
6443 Amusement Attraction Operators and Other Amusement Occupations 6671 Attendants in Recreation and Sport	6670 Attendants in Amusement, Recreation and Sport
7265 Welders 9515 Welding, Brazing and Soldering Machine Operators	9510 Welders and Soldering Machine Operators

* The SOC 1991 codes shown here are not the full codes. SOC 1991 unit group codes have eight digits; the last four digits are the same as the NOC unit group codes.

NOC Research and Development

Chronology

In 1984, EIC conducted a survey of users of the CCDO and occupational statistics to gather information on the concerns, problems and preferences for change of a broad range of CCDO users. In April of that year, over 1,000 questionnaires were sent out to possible users in

- the federal government
- provincial governments
- municipal governments
- universities
- labour organizations
- consulting firms
- other businesses
- non-profit associations.

A response rate of about 45% was obtained.

Respondents identified a range of problems at each level of aggregation in the CCDO and indicated a significant desire for change. Specifically, they sought more categories at the various levels of aggregation and suggested that different classification criteria be employed.

The grouping criteria most frequently requested by respondents at all levels of aggregation were:

- skill level, as measured by the technical or educational background required in order to obtain the job,
- kind of work (especially at the lower levels of aggregation), and
- skill level, as measured by the complexity or difficulty of the tasks the worker performs.

Approval was granted to the Occupational and Career Information Branch in March 1985 to

proceed with a national program of occupational analysis designed to replace the current classification of occupations.

Methodology

Two main methodologies surveys and industry studies were used in the collection of occupational information for the NOC.

The first method, occupational surveys, was used for several professional occupations and for occupational groups which are found in a large number of establishments across industry sectors. For example, surveys were conducted for occupations in

- Nursing
- Computing
- Sales
- Recreation
- Finance
- Legal Services.

The survey methodology involved a great deal of preliminary field work to develop and test questionnaires and to devise representative samples. Questionnaires and postage-paid return envelopes were mailed to both job incumbents and supervisors of job incumbents. Questions called for both closed and open-ended responses and dealt with education, training, job history and job functions. In some cases, personnel officers or managers of co-operating establishments were asked to help in selecting incumbents to respond to the survey. Upon receipt of the returns, the responses were coded and subjected to various statistical analyses.

The second methodology was called the industry study. This involved establishment interview studies to identify the full range of production and technical jobs in the manufacturing, resource extraction, processing, transportation and utilities sectors.

Study areas were selected initially by examining industry/occupation employment matrices and selecting industrial groups that appeared to be reasonably homogeneous in terms of their occupations and technologies. Individual analysts or small teams of analysts were assigned to each industrial sector. The analysts began by conducting literature searches and often by contacting industry associations. The associations were useful in helping to identify variables to consider when selecting companies for the study, such as different production technologies and geographical and size distributions. Representative samples of employer establishments were then developed considering these variables. Associations were often able to supply lists of recommended contacts in the industry. Interview appointments were made with managers or personnel managers of firms. Large organizations were occasionally approached at the Vice-President of Human Resources level to clear the way for contacts at subordinate levels.

Analysts visited the establishments and conducted lengthy interviews with management and supervisory level employees. Information was collected on

- job titles
- main functions of each job
- numbers of workers in each job category
- hiring requirements
- lines of progression
- training time and
- trends or changes affecting jobs.

Wherever possible, plant tours were arranged to observe the work being performed. Standardized reports were subsequently prepared for each establishment visit. Following the completion of the interviews in each industry, summary reports were prepared including recommendations for occupational groups for jobs in the industry.

Many white collar occupations, especially those occurring in internal labour markets, were studied with a variation on the industry establishment methodology. The white collar studies were undertaken in a number of broad economic sectors, such as health care administration, educational administration, utilities and wholesale and retail industries.

The studies began with the selection of a representative sample of establishments. Size, specialization and geographical distribution were considered. Initial telephone calls were then made to senior personnel or human resources managers followed by letters explaining the nature and purpose of the study. Participants were asked to send any available organization charts or indexes to job classification systems. These documents were reviewed to identify the specific organizational units in which the research would be focused. The docu-

ments allowed the identification of functional similarities between firms in each industrial sector. They also allowed the comparison of common functional areas across industry sectors. The process of reviewing organizational charts and job descriptions allowed the collection of better information on the jobs under consideration by narrowing the field of study for each establishment.

After the selection of units or occupations to be studied in depth, personal interviews were conducted with managers in the units. Information was collected on job duties, hiring requirements, sources of supply and career progression. The information was recorded on standard data collection forms. These records were later synthesized to produce occupational reports. When information was collected on jobs which are not considered unique to the sector, it was combined with records from other sector studies that covered similar positions — for instance, positions in personnel administration or marketing. These cross-sector files were later used in the analysis and development of appropriate occupational categories.

Occupational analysts examined data collected through interviews or surveys in order to propose occupational groupings that conformed with the NOC criteria of similarity of skill level and skill type and to reflect mobility patterns and the significance of industry. Analysts then produced a report containing findings and classification recommendations.

An internal committee of occupational specialists reviewed the findings and the proposed NOC groups. Changes were often required for reasons of consistency with other NOC groups or due to practical considerations such as the need to have occupational groups that would contain a certain minimum number of workers.

Based on recommendations of the review committee, occupational analysts wrote descriptions of proposed NOC groups which included main duties performed, typical job titles, entry requirements and mobility patterns. A comprehensive list of titles to be included in the NOC index was also prepared.

The proposed NOC groups and lists of titles were forwarded to Statistics Canada for comments and assessment of whether the groups were "codeable" and feasible from an operational point of view. Following the review by Statistics Canada, many groups were modified to address any concerns that had been raised.

At the same time the unit groups were being researched and written, proposals for the overall structure of the higher levels of aggregation of the NOC (i.e., major and minor groups) were being developed in consultation with Statistics Canada.

A validation process was conducted wherein a sample of users, employers, associations, unions and other experts reviewed the proposed groups to evaluate their technical content and recommend any final changes.

Statistics Canada has tested a coding manual based on the draft NOC in a major pre-test of the 1991 Census of Canada. The practical experience gained in the pre-test was taken into consideration along with the results of the validation process when the draft was revised to produce this finalized version.

NOC Major Group Structure

00	Senior Management Occupations
01-09	Middle and Other Management Occupations
11	Professional Occupations in Business and Finance
12	Skilled Administrative and Business Occupations
14	Clerical Occupations
21	Professional Occupations in Natural and Applied Sciences
22	Technical Occupations Related to Natural and Applied Sciences
31	Professional Occupations in Health
32	Technical and Skilled Occupations in Health
34	Assisting Occupations in Support of Health Services
41	Professional Occupations in Social Science, Education, Government Services and Religion
42	Paraprofessional Occupations in Law, Social Services, Education and Religion
51	Professional Occupations in Art and Culture
52	Technical and Skilled Occupations in Art, Culture, Recreation and Sport
62	Skilled Sales and Service Occupations
64	Intermediate Sales and Service Occupations
66	Elemental Sales and Service Occupations
72-73	Trades and Skilled Transport and Equipment Operators
74	Intermediate Occupations in Transport, Equipment Operation, Installation and Maintenance
76	Trades Helpers, Construction Labourers and Related Occupations
82	Skilled Occupations in Primary Industry
84	Intermediate Occupations in Primary Industry
86	Labourers in Primary Industry
92	Processing, Manufacturing and Utilities Supervisors and Skilled Operators
94-95	Processing and Manufacturing Machine Operators and Assemblers
96	Labourers in Processing, Manufacturing and Utilities

NOC Major and Minor Group Structure

MANAGEMENT OCCUPATIONS

Major Group 00
SENIOR MANAGEMENT OCCUPATIONS

001 Legislators and Senior Management

Major Group 01-09
MIDDLE AND OTHER MANAGEMENT OCCUPATIONS

011 Administrative Services Managers
012 Managers in Financial and Business Services
013 Managers in Communication (Except Broadcasting)
021 Managers in Engineering, Architecture, Science and Information Systems
031 Managers in Health, Education, Social and Community Services
041 Managers in Public Administration
051 Managers in Art, Culture, Recreation and Sport
061 Sales, Marketing and Advertising Managers
062 Managers in Retail Trade
063 Managers in Food Service and Accommodation
064 Managers in Protective Service
065 Managers in Other Services
071 Managers in Construction and Transportation
072 Facility Operation and Maintenance Managers
081 Managers in Primary Production (Except Agriculture)
091 Managers in Manufacturing and Utilities

BUSINESS, FINANCE AND ADMINISTRATION OCCUPATIONS

Major Group 11
PROFESSIONAL OCCUPATIONS IN BUSINESS AND FINANCE

111 Auditors, Accountants and Investment Professionals
112 Human Resources and Business Service Professionals

Major Group 12
SKILLED ADMINISTRATIVE AND BUSINESS OCCUPATIONS

121 Clerical Supervisors
122 Administrative and Regulatory Occupations
123 Finance and Insurance Administrative Occupations
124 Secretaries, Recorders and Transcriptionists

Major Group 14
CLERICAL OCCUPATIONS

141 Clerical Occupations, General Office Skills
142 Office Equipment Operators
143 Finance and Insurance Clerks
144 Administrative Support Clerks
145 Library, Correspondence and Related Information Clerks
146 Mail and Message Distribution Occupations
147 Recording, Scheduling and Distributing Occupations

NATURAL AND APPLIED SCIENCES AND RELATED OCCUPATIONS

Major Group 21
PROFESSIONAL OCCUPATIONS IN NATURAL AND APPLIED SCIENCES

211 Physical Science Professionals
212 Life Science Professionals
213 Civil, Mechanical, Electrical and Chemical Engineers
214 Other Engineers
215 Architects, Urban Planners and Land Surveyors
216 Mathematicians, Systems Analysts and Computer Programmers

Major Group 22
TECHNICAL OCCUPATIONS IN NATURAL AND APPLIED SCIENCES

221 Technical Occupations in Physical Sciences
222 Technical Occupations in Life Sciences
223 Technical Occupations in Civil, Mechanical and Industrial Engineering
224 Technical Occupations in Electronics and Electrical Engineering
225 Technical Occupations in Architecture, Drafting, Surveying and Mapping
226 Other Technical Inspectors and Regulatory Officers
227 Transportation Officers and Controllers

HEALTH OCCUPATIONS

Major Group 31
PROFESSIONAL OCCUPATIONS IN HEALTH

311 Physicians, Dentists and Veterinarians
312 Optometrists, Chiropractors and Other Health Diagnosing and Treating Professionals
313 Pharmacists, Dietitians and Nutritionists
314 Therapy and Assessment Professionals
315 Nurse Supervisors and Registered Nurses

Major Group 32
TECHNICAL AND SKILLED OCCUPATIONS IN HEALTH

321 Medical Technologists and Technicians (Except Dental Health)
322 Technical Occupations in Dental Health Care
323 Other Technical Occupations in Health Care (Except Dental)

Major Group 34
ASSISTING OCCUPATIONS IN SUPPORT OF HEALTH SERVICES

341 Assisting Occupations in Support of Health Services

OCCUPATIONS IN SOCIAL SCIENCE, EDUCATION, GOVERNMENT SERVICE AND RELIGION

Major Group 41
PROFESSIONAL OCCUPATIONS IN SOCIAL SCIENCE, EDUCATION, GOVERNMENT SERVICES AND RELIGION

411 Judges, Lawyers and Quebec Notaries
412 University Professors and Assistants
413 College and Other Vocational Instructors
414 Secondary and Elementary School Teachers and Counsellors
415 Psychologists, Social Workers, Counsellors, Clergy and Probation Officers
416 Policy and Program Officers, Researchers and Consultants

Major Group 42
PARAPROFESSIONAL OCCUPATIONS IN LAW, SOCIAL SERVICES, EDUCATION AND RELIGION

421 Paralegals, Social Services Workers and Occupations in Education and Religion, n.e.c.

OCCUPATIONS IN ART, CULTURE, RECREATION AND SPORT

Major Group 51
PROFESSIONAL OCCUPATIONS IN ART AND CULTURE

511 Librarians, Archivists, Conservators and Curators
512 Writing, Translating and Public Relations Professionals
513 Creative and Performing Artists

Major Group 52
TECHNICAL AND SKILLED OCCUPATIONS IN ART, CULTURE, RECREATION AND SPORT

521 Technical Occupations in Libraries, Archives, Museums and Galleries
522 Photographers, Graphic Arts Technicians and Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts
523 Announcers and Other Performers
524 Creative Designers and Craftspersons
525 Athletes, Coaches, Referees and Related Occupations

SALES AND SERVICE OCCUPATIONS

Major Group 62
SKILLED SALES AND SERVICE OCCUPATIONS

621 Sales and Service Supervisors
622 Technical Sales Specialists, Wholesale Trade
623 Insurance and Real Estate Sales Occupations and Buyers
624 Chefs and Cooks
625 Butchers and Bakers
626 Police Officers and Firefighters
627 Technical Occupations in Personal Service

Major Group 64
INTERMEDIATE SALES AND SERVICE OCCUPATIONS

641 Sales Representatives, Wholesale Trade
642 Retail Salespersons and Sales Clerks
643 Occupations in Travel and Accommodation
644 Tour and Recreational Guides and Amusement Occupations
645 Occupations in Food and Beverage Service
646 Other Occupations in Protective Service
647 Childcare and Home Support Workers
648 Other Occupations in Personal Service

Major Group 66
ELEMENTAL SALES AND SERVICE OCCUPATIONS

661 Cashiers
662 Other Sales and Related Occupations
663 Elemental Medical and Hospital Assistants
664 Food Counter Attendants and Kitchen Helpers
665 Security Guards and Related Occupations
666 Cleaners
667 Other Attendants in Travel, Accommodation and Recreation
668 Other Elemental Service Occupations

TRADES, TRANSPORT AND EQUIPMENT OPERATORS AND RELATED OCCUPATIONS

Major Group 72-73
TRADES AND SKILLED TRANSPORT AND EQUIPMENT OPERATORS

721 Contractors and Supervisors, Trades and Related Workers
722 Supervisors, Railway and Motor Transportation Occupations
723 Machinists and Related Occupations
724 Electrical Trades and Telecommunication Occupations
725 Plumbers, Pipefitters and Gas Fitters
726 Metal Forming, Shaping and Erecting Occupations
727 Carpenters and Cabinetmakers
728 Masonry and Plastering Trades
729 Other Construction Trades
731 Machinery and Transportation Equipment Mechanics (Except Motor Vehicle)
732 Motor Vehicle Mechanics
733 Other Mechanics
734 Upholsterers, Tailors, Shoe Repairers, Jewellers and Related Occupations
735 Stationary Engineers and Power Station and System Operators
736 Train Crew Operating Occupations
737 Crane Operators, Drillers and Blasters
738 Printing Press Operators, Commercial Divers and Other Trades and Related Occupations, n.e.c.

Major Group 74
INTERMEDIATE OCCUPATIONS IN TRANSPORT, EQUIPMENT OPERATION, INSTALLATION AND MAINTENANCE

741 Motor Vehicle and Transit Drivers
742 Heavy Equipment Operators
743 Other Transport Equipment Operators and Related Workers
744 Other Installers, Repairers and Servicers
745 Longshore Workers and Material Handlers

Major Group 76
TRADES HELPERS, CONSTRUCTION LABOURERS AND RELATED OCCUPATIONS

761 Trades Helpers and Labourers
762 Public Works and Other Labourers, n.e.c.

OCCUPATIONS UNIQUE TO PRIMARY INDUSTRY

Major Group 82
SKILLED OCCUPATIONS IN PRIMARY INDUSTRY

821 Supervisors, Logging and Forestry
822 Supervisors, Mining, Oil and Gas
823 Underground Miners, Oil and Gas Drillers and Related Workers
824 Logging Machinery Operators
825 Contractors, Operators and Supervisors in Agriculture, Horticulture and Aquaculture
826 Fishing Vessel Masters and Skippers and Fishermen/women

Major Group 84
INTERMEDIATE OCCUPATIONS IN PRIMARY INDUSTRY

841 Mine Service Workers and Operators in Oil and Gas Drilling
842 Logging and Forestry Workers
843 Agriculture and Horticulture Workers
844 Other Fishing and Trapping Occupations

Major Group 86
LABOURERS IN PRIMARY INDUSTRY

861 Primary Production Labourers

OCCUPATIONS UNIQUE TO PROCESSING, MANUFACTURING AND UTILITIES

Major Group 92
PROCESSING, MANUFACTURING AND UTILITIES SUPERVISORS AND SKILLED OPERATORS

921 Supervisors, Processing Occupations
922 Supervisors, Assembly and Fabrication
923 Central Control and Process Operators in Manufacturing and Processing

Major Group 94-95
PROCESSING, MANUFACTURING AND MACHINE OPERATORS AND ASSEMBLERS

941 Machine Operators and Related Workers in Metal and Mineral Products Processing
942 Machine Operators and Related Workers in Chemical, Plastic and Rubber Processing
943 Machine Operators and Related Workers in Pulp and Paper Production and Wood Processing
944 Machine Operators and Related Workers in Textile Processing
945 Machine Operators and Related Workers in Fabric, Fur and Leather Products Manufacturing
946 Machine Operators and Related Workers in Food, Beverage and Tobacco Processing
947 Printing Machine Operators and Related Occupations
948 Mechanical, Electrical and Electronics Assemblers
949 Other Assembly and Related Occupations
951 Machining, Metalworking, Woodworking and Related Machine Operators

Major Group 96
LABOURERS IN PROCESSING, MANUFACTURING AND UTILITIES

961 Labourers in Processing, Manufacturing and Utilities

NOC Major, Minor and Unit Group Structure

MANAGEMENT OCCUPATIONS

Major Group 00
SENIOR MANAGEMENT OCCUPATIONS

001 Legislators and Senior Management

0011 Legislators
0012 Senior Government Managers and Officials
0013 Senior Managers - Financial, Communications Carriers and Other Business Services
0014 Senior Managers - Health, Education, Social and Community Services and Membership Organizations
0015 Senior Managers - Trade, Broadcasting and Other Services, n.e.c.*
0016 Senior Managers - Goods Production, Utilities, Transportation and Construction

Major Group 01-09
MIDDLE AND OTHER MANAGEMENT OCCUPATIONS

011 Administrative Services Managers

0111 Financial Managers
0112 Human Resources Managers
0113 Purchasing Managers
0114 Other Administrative Services Managers

012 Managers in Financial and Business Services

0121 Insurance, Real Estate and Financial Brokerage Managers
0122 Banking, Credit and Other Investment Managers
0123 Other Business Services Managers

013 Managers in Communication (Except Broadcasting)

0131 Telecommunication Carriers Managers
0132 Postal and Courier Services Managers

021 Managers in Engineering, Architecture, Science and Information Systems[1]

0210 Engineering, Science and Architecture Managers
0211 Engineering Managers
0212 Architecture and Science Managers
0213 Information Systems and Data Processing Managers

031 Managers in Health, Education, Social and Community Services

0311 Managers in Health Care
0312 Administrators in Post-Secondary Education and Vocational Training
0313 School Principals and Administrators of Elementary and Secondary Education
0314 Managers in Social, Community and Correctional Services

* n.e.c. = not elsewhere classified
[1] In data provided by Statistics Canada, unit groups 0211 and 0212 are combined to form *0210 Engineering, Science and Architecture Managers*.

041 Managers in Public Administration

0411 Government Managers in Health and Social Policy Development and Program Administration
0412 Government Managers in Economic Analysis, Policy Development and Program Administration
0413 Government Managers in Education Policy Development and Program Administration
0414 Other Managers in Public Administration

051 Managers in Art, Culture, Recreation and Sport

0511 Library, Archive, Museum and Art Gallery Managers
0512 Managers in Publishing, Motion Pictures, Broadcasting and Performing Arts
0513 Recreation and Sport Program and Service Directors

061 Sales, Marketing and Advertising Managers

0611 Sales, Marketing and Advertising Managers

062 Managers in Retail Trade

0621 Retail Trade Managers

063 Managers in Food Service and Accommodation

0631 Restaurant and Food Service Managers
0632 Accommodation Service Managers

064 Managers in Protective Service

0641 Commissioned Police Officers
0642 Fire Chiefs and Senior Firefighting Officers
0643 Commissioned Officers, Armed Forces[2]

065 Managers in Other Services

0651 Other Services Managers

071 Managers in Construction and Transportation

0711 Construction Managers
0712 Residential Home Builders and Renovators
0713 Transportation Managers

072 Facility Operation and Maintenance Managers[3]

0720 Facility Operation and Maintenance Managers
0721 Facility Operation Managers
0722 Maintenance Managers

081 Managers in Primary Production (Except Agriculture)

0811 Primary Production Managers (Except Agriculture)

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[2] This unit group includes occupations unique to the armed forces. However, Statistics Canada data for this unit group includes all commissioned officers. (See introduction.)
[3] In data provided by Statistics Canada, unit groups 0721 and 0722 are combined to form *0720 Facility Operation and Maintenance Managers*.

091 Managers in Manufacturing and Utilities

0911 Manufacturing Managers
0912 Utilities Managers

BUSINESS, FINANCE AND ADMNISTRATION OCCUPATIONS

Major Group 11
PROFESSIONAL OCCUPATIONS IN BUSINESS AND FINANCE

111 Auditors, Accountants and Investment Professionals

1111 Financial Auditors and Accountants
1112 Financial and Investment Analysts
1113 Securities Agents, Investment Dealers and Traders
1114 Other Financial Officers

112 Human Resources and Business Service Professionals

1121 Specialists in Human Resources
1122 Professional Occupations in Business Services to Management

Major Group 12
SKILLED ADMINISTRATIVE AND BUSINESS OCCUPATIONS

121 Clerical Supervisors

1211 Supervisors, General Office and Administrative Support Clerks
1212 Supervisors, Finance and Insurance Clerks
1213 Supervisors, Library, Correspondence and Related Information Clerks
1214 Supervisors, Mail and Message Distribution Occupations
1215 Supervisors, Recording, Distributing and Scheduling Occupations

122 Administrative and Regulatory Occupations

1221 Administrative Officers
1222 Executive Assistants
1223 Personnel and Recruitment Officers
1224 Property Administrators
1225 Purchasing Agents and Officers
1226 Conference and Event Planners
1227 Court Officers and Justices of the Peace
1228 Immigration, Unemployment Insurance and Revenue Officers

123 Finance and Insurance Administrative Occupations

1231 Bookkeepers
1232 Loan Officers
1233 Insurance Adjusters and Claims Examiners
1234 Insurance Underwriters
1235 Assessors, Valuators and Appraisers
1236 Customs, Ship and Other Brokers

124 Secretaries, Recorders and Transcriptionists

1241 Secretaries (Except Legal and Medical)
1242 Legal Secretaries
1243 Medical Secretaries
1244 Court Recorders and Medical Transcriptionists

Major Group 14
CLERICAL OCCUPATIONS

141 Clerical Occupations, General Office Skills

1411 General Office Clerks
1412 Typists and Word Processing Operators
1413 Records and File Clerks
1414 Receptionists and Switchboard Operators

142 Office Equipment Operators

1421 Computer Operators
1422 Data Entry Clerks
1423 Typesetters and Related Occupations
1424 Telephone Operators

143 Finance and Insurance Clerks

1431 Accounting and Related Clerks
1432 Payroll Clerks
1433 Tellers, Financial Services
1434 Banking, Insurance and Other Financial Clerks
1435 Collectors

144 Administrative Support Clerks

1441 Administrative Clerks
1442 Personnel Clerks
1443 Court Clerks

145 Library, Correspondence and Related Information Clerks

1451 Library Clerks
1452 Correspondence, Publication and Related Clerks
1453 Customer Service, Information and Related Clerks
1454 Survey Interviewers and Statistical Clerks

146 Mail and Message Distribution Occupations

1461 Mail, Postal and Related Clerks
1462 Letter Carriers
1463 Couriers and Messengers

147 Recording, Scheduling and Distributing Occupations

1471 Shippers and Receivers
1472 Storekeepers and Parts Clerks
1473 Production Clerks
1474 Purchasing and Inventory Clerks
1475 Dispatchers and Radio Operators
1476 Transportation Route and Crew Schedulers

NATURAL AND APPLIED SCIENCES AND RELATED OCCUPATIONS

Major Group 21
PROFESSIONAL OCCUPATIONS IN NATURAL AND APPLIED SCIENCES

211 Physical Science Professionals

2111 Physicists and Astronomers
2112 Chemists
2113 Geologists, Geochemists and Geophysicists
2114 Meteorologists
2115 Other Professional Occupations in Physical Sciences

212 Life Science Professionals

2121 Biologists and Related Scientists
2122 Forestry Professionals
2123 Agricultural Representatives, Consultants and Specialists

213 Civil, Mechanical, Electrical and Chemical Engineers

2131 Civil Engineers
2132 Mechanical Engineers
2133 Electrical and Electronics Engineers
2134 Chemical Engineers

214 Other Engineers

2141 Industrial and Manufacturing Engineers
2142 Metallurgical and Materials Engineers
2143 Mining Engineers
2144 Geological Engineers
2145 Petroleum Engineers
2146 Aerospace Engineers
2147 Computer Engineers
2148 Other Professional Engineers, n.e.c.

215 Architects, Urban Planners and Land Surveyors

2151 Architects
2152 Landscape Architects
2153 Urban and Land Use Planners
2154 Land Surveyors

216 Mathematicians, Systems Analysts and Computer Programmers

2161 Mathematicians, Statisticians and Actuaries
2162 Computer Systems Analysts
2163 Computer Programmers

Major Group 22
TECHNICAL OCCUPATIONS RELATED TO NATURAL AND APPLIED SCIENCES

221 Technical Occupations in Physical Sciences

2211 Applied Chemical Technologists and Technicians
2212 Geological and Mineral Technologists and Technicians
2213 Meteorological Technicians

222 Technical Occupations in Life Sciences

2221 Biological Technologists and Technicians
2222 Agricultural and Fish Products Inspectors
2223 Forestry Technologists and Technicians
2224 Conservation and Fishery Officers
2225 Landscape and Horticultural Technicians and Specialists

223 Technical Occupations in Civil, Mechanical and Industrial Engineering[4]

2230 Civil Engineering Technologists and Technicians and Construction Estimators
2231 Civil Engineering Technologists and Technicians
2232 Mechanical Engineering Technologists and Technicians
2233 Industrial Engineering and Manufacturing Technologists and Technicians
2234 Construction Estimators

224 Technical Occupations in Electronics and Electrical Engineering

2241 Electrical and Electronics Engineering Technologists and Technicians
2242 Electronic Service Technicians (Household and Business Equipment)
2243 Industrial Instrument Technicians and Mechanics
2244 Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors

225 Technical Occupations in Architecture, Drafting, Surveying and Mapping

2251 Architectural Technologists and Technicians
2252 Industrial Designers
2253 Drafting Technologists and Technicians
2254 Survey Technologists and Technicians
2255 Mapping and Related Technologists and Technicians

226 Other Technical Inspectors and Regulatory Officers

2261 Nondestructive Testers and Inspectors
2262 Engineering Inspectors and Regulatory Officers
2263 Inspectors in Public and Environmental Health and Occupational Health and Safety
2264 Construction Inspectors

[4] In data provided by Statistics Canada, unit groups 2231 and 2234 are combined to form *2230 Civil Engineering Technologists and Technicians and Construction Estimators.*

227 Transportation Officers and Controllers

2271 Air Pilots, Flight Engineers and Flying Instructors
2272 Air Traffic Control Occupations
2273 Deck Officers, Water Transport
2274 Engineer Officers, Water Transport
2275 Railway and Marine Traffic Controllers

HEALTH OCCUPATIONS

Major Group 31
PROFESSIONAL OCCUPATIONS IN HEALTH

311 Physicians, Dentists and Veterinarians

3111 Specialist Physicians
3112 General Practitioners and Family Physicians
3113 Dentists
3114 Veterinarians

312 Optometrists, Chiropractors and Other Health Diagnosing and Treating Professionals

3121 Optometrists
3122 Chiropractors
3123 Other Professional Occupations in Health Diagnosing and Treating

313 Pharmacists, Dietitians and Nutritionists

3131 Pharmacists
3132 Dietitians and Nutritionists

314 Therapy and Assessment Professionals

3141 Audiologists and Speech-Language Pathologists
3142 Physiotherapists
3143 Occupational Therapists
3144 Other Professional Occupations in Therapy and Assessment

315 Nurse Supervisors and Registered Nurses

3151 Head Nurses and Supervisors
3152 Registered Nurses

Major Group 32
TECHNICAL AND SKILLED OCCUPATIONS IN HEALTH

321 Medical Technologists and Technicians (Except Dental Health)

3211 Medical Laboratory Technologists and Pathologists' Assistants
3212 Medical Laboratory Technicians
3213 Animal Health Technologists
3214 Respiratory Therapists and Clinical Perfusionists
3215 Medical Radiation Technologists
3216 Medical Sonographers
3217 Cardiology Technologists
3218 Electroencephalographic and Other Diagnostic Technologists, n.e.c.
3219 Other Medical Technologists and Technicians (Except Dental Health)

322 Technical Occupations in Dental Health Care[5]

3220 Dental Technicians and Laboratory Bench Workers
3221 Denturists
3222 Dental Hygienists and Dental Therapists
3223 Dental Technicians

323 Other Technical Occupations in Health Care (Except Dental)

3231 Opticians
3232 Midwives and Practitioners of Natural Healing
3233 Registered Nursing Assistants
3234 Ambulance Attendants and Other Paramedical Occupations
3235 Other Technical Occupations in Therapy and Assessment

Major Group 34
ASSISTING OCCUPATIONS IN SUPPORT OF HEALTH SERVICES

341 Assisting Occupations in Support of Health Services[6]

3411 Dental Assistants
3412 Dental Laboratory Bench Workers
3413 Nurse Aides and Orderlies
3414 Other Aides and Assistants in Support of Health Services

OCCUPATIONS IN SOCIAL SCIENCE, EDUCATION, GOVERNMENT SERVICE AND RELIGION

Major Group 41
PROFESSIONAL OCCUPATIONS IN SOCIAL SCIENCE, EDUCATION, GOVERNMENT SERVICES AND RELIGION

411 Judges, Lawyers and Quebec Notaries

4111 Judges
4112 Lawyers and Quebec Notaries

[5] In data provided by Statistics Canada, unit groups 3223 and 3412 are combined to form *3220 Dental Technicians and Laboratory Bench Workers*. Hence, Statistics Canada data for major group 32 and for minor group 322 includes unit group 3412.
[6] In data provided by Statistics Canada, unit groups 3223 and 3412 are combined to form *3220 Dental Technicians and Laboratory Bench Workers*. Hence, Statistics Canada data for major group 34 and for minor group 341 does not include unit group 3412.

412 University Professors and Assistants

4121 University Professors
4122 Post-Secondary Teaching and Research Assistants

413 College and Other Vocational Instructors

4131 College and Other Vocational Instructors

414 Secondary and Elementary School Teachers and Counsellors

4141 Secondary School Teachers
4142 Elementary School and Kindergarten Teachers
4143 School and Guidance Counsellors

415 Psychologists, Social Workers, Counsellors, Clergy and Probation Officers

4151 Psychologists
4152 Social Workers
4153 Family, Marriage and Other Related Counsellors
4154 Ministers of Religion
4155 Probation and Parole Officers and Related Occupations

416 Policy and Program Officers, Researchers and Consultants[7]

4160 Health and Social Policy Researchers, Consultants and Program Officers
4161 Natural and Applied Science Policy Researchers, Consultants and Program Officers
4162 Economists and Economic Policy Researchers and Analysts
4163 Economic Development Officers and Marketing Researchers and Consultants
4164 Social Policy Researchers, Consultants and Program Officers
4165 Health Policy Researchers, Consultants and Program Officers
4166 Education Policy Researchers, Consultants and Program Officers
4167 Recreation and Sports Program Supervisors and Consultants
4168 Program Officers Unique to Government
4169 Other Professional Occupations in Social Science

Major Group 42
PARAPROFESSIONAL OCCUPATIONS IN LAW, SOCIAL SERVICES, EDUCATION AND RELIGION

421 Paralegals, Social Services Workers and Occupations in Education and Religion, n.e.c.[8]

4211 Paralegal and Related Occupations
4212 Community and Social Service Workers
4213 Employment Counsellors
4214 Early Childhood Educators
4215 Instructors and Teachers of Disabled Persons
4216 Other Instructors
4217 Other Religious Occupations

[7] In data provided by Statistics Canada, unit groups 4164 and 4165 are combined to form *4160 Health and Social Policy Researchers, Consultants and Program Officers*.
[8] In data provided by Statistics Canada, unit groups 4214 and 6473 are combined to form *6470 Early Childhood Educators and Assistants*. Hence, Statistics Canada data for major group 42 and for minor group 421 does not include unit group 4214.

OCCUPATIONS IN ART, CULTURE, RECREATION AND SPORT

Major Group 51
PROFESSIONAL OCCUPATIONS IN ART AND CULTURE

511 Librarians, Archivists, Conservators and Curators

5111 Librarians
5112 Conservators and Curators
5113 Archivists

512 Writing, Translating and Public Relations Professionals

5121 Writers
5122 Editors
5123 Journalists
5124 Professional Occupations in Public Relations and Communications
5125 Translators, Terminologists and Interpreters

513 Creative and Performing Artists

5131 Producers, Directors, Choreographers and Related Occupations
5132 Conductors, Composers and Arrangers
5133 Musicians and Singers
5134 Dancers
5135 Actors
5136 Painters, Sculptors and Other Visual Artists

Major Group 52
TECHNICAL AND SKILLED OCCUPATIONS IN ART, CULTURE, RECREATION AND SPORT

521 Technical Occupations in Libraries, Archives, Museums and Galleries

5211 Library and Archive Technicians and Assistants
5212 Technical Occupations Related to Museums and Galleries

522 Photographers, Graphic Arts Technicians and Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts

5221 Photographers
5222 Film and Video Camera Operators
5223 Graphic Arts Technicians
5224 Broadcast Technicians
5225 Audio and Video Recording Technicians
5226 Other Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts
5227 Support and Assisting Occupations in Motion Pictures, Broadcasting and the Performing Arts

523 Announcers and Other Performers

5231 Announcers and Other Broadcasters
5232 Other Performers

524 Creative Designers and Craftspersons

5241 Graphic Designers and Illustrating Artists
5242 Interior Designers
5243 Theatre, Fashion, Exhibit and Other Creative Designers
5244 Artisans and Craftspersons
5245 Patternmakers - Textile, Leather and Fur Products

525 Athletes, Coaches, Referees and Related Occupations

5251 Athletes
5252 Coaches
5253 Sports Officials and Referees
5254 Program Leaders and Instructors in Recreation and Sport

SALES AND SERVICE OCCUPATIONS

Major Group 62
SKILLED SALES AND SERVICE OCCUPATIONS

621 Sales and Service Supervisors

6211 Retail Trade Supervisors
6212 Food Service Supervisors
6213 Executive Housekeepers
6214 Dry Cleaning and Laundry Supervisors
6215 Cleaning Supervisors
6216 Other Service Supervisors

622 Technical Sales Specialists, Wholesale Trade

6221 Technical Sales Specialists, Wholesale Trade

623 Insurance and Real Estate Sales Occupations and Buyers

6231 Insurance Agents and Brokers
6232 Real Estate Agents and Salespersons
6233 Retail and Wholesale Buyers
6234 Grain Elevator Operators

624 Chefs and Cooks

6241 Chefs
6242 Cooks

625 Butchers and Bakers

6251 Butchers and Meat Cutters, Retail and Wholesale
6252 Bakers

626 Police Officers and Firefighters

6261 Police Officers (Except Commissioned)
6262 Firefighters

627 Technical Occupations in Personal Service

6271 Hairstylists and Barbers
6272 Funeral Directors and Embalmers

Major Group 64
INTERMEDIATE SALES AND SERVICE OCCUPATIONS

641 Sales Representatives, Wholesale Trade

6411 Sales Representatives, Wholesale Trade (Non-Technical)

642 Retail Salespersons and Sales Clerks

6421 Retail Salespersons and Sales Clerks

643 Occupations in Travel and Accommodation

6431 Travel Counsellors
6432 Pursers and Flight Attendants
6433 Airline Sales and Service Agents
6434 Ticket and Cargo Agents and Related Clerks (Except Airline)
6435 Hotel Front Desk Clerks

644 Tour and Recreational Guides and Amusement Occupations[9]

6441 Tour and Travel Guides
6442 Outdoor Sport and Recreational Guides
6443 Amusement Attraction Operators and Other Amusement Occupations

645 Occupations in Food and Beverage Service

6451 Maîtres d'hôtel and Hosts/Hostesses
6452 Bartenders
6453 Food and Beverage Servers

646 Other Occupations in Protective Service

6461 Sheriffs and Bailiffs
6462 Correctional Service Officers
6463 By-law Enforcement and Other Regulatory Officers, n.e.c.
6464 Occupations Unique to the Armed Forces[10]
6465 Other Protective Service Occupations

647 Childcare and Home Support Workers[11]

6470 Early Childhood Educators and Assistants
6471 Visiting Homemakers, Housekeepers and Related Occupations
6472 Elementary and Secondary School Teacher Assistants
6473 Early Childhood Educator Assistants
6474 Babysitters, Nannies and Parents' Helpers

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[9] In data provided by Statistics Canada, unit groups 6443 and 6671 are combined to form *6670 Attendants in Amusement, Recreation and Sport.* Hence, Statistics Canada data for major group 64 and for minor group 644 does not include unit group 6443.
[10] This unit group only includes occupations unique to the armed forces. However, Statistics Canada data for this unit group includes all non-commissioned armed forces personnel. (See introduction.)
[11] In data provided by Statistics Canada, unit groups 4214 and 6473 are combined to form *6470 Early Childhood Educators and Assistants.* Hence, data for major group 64 and for minor group 647 includes unit group 4214.

648 Other Occupations in Personal Service

6481 Image, Social and Other Personal Consultants
6482 Estheticians, Electrologists and Related Occupations
6483 Pet Groomers and Animal Care Workers
6484 Other Personal Service Occupations

Major Group 66
ELEMENTAL SALES AND SERVICE OCCUPATIONS

661 Cashiers

6611 Cashiers

662 Other Sales and Related Occupations

6621 Service Station Attendants
6622 Grocery Clerks and Shelf Stockers
6623 Other Elemental Sales Occupations

663 Elemental Medical and Hospital Assistants

6631 Elemental Medical and Hospital Assistants

664 Food Counter Attendants and Kitchen Helpers

6641 Food Service Counter Attendants and Food Preparers
6642 Kitchen and Food Service Helpers

665 Security Guards and Related Occupations

6651 Security Guards and Related Occupations

666 Cleaners

6661 Light Duty Cleaners
6662 Specialized Cleaners
6663 Janitors, Caretakers and Building Superintendents

667 Other Attendants in Travel, Accommodation and Recreation[12]

6670 Attendants in Amusement, Recreation and Sport
6671 Attendants in Recreation and Sport
6672 Other Attendants in Accommodation and Travel (Except Airline Travel)

668 Other Elemental Service Occupations

6681 Dry Cleaning and Laundry Occupations
6682 Ironing, Pressing and Finishing Occupations
6683 Other Elemental Service Occupations

[12] In data provided by Statistics Canada, unit groups 6443 and 6671 are combined to form *6670 Attendants in Amusement, Recreation and Sport*. Hence, data for major group 66 and for minor group 667 includes unit group 6443.

TRADES, TRANSPORT AND EQUIPMENT OPERATORS AND RELATED OCCUPATIONS

Major Group 72-73
TRADES AND SKILLED TRANSPORT AND EQUIPMENT OPERATORS

721 Contractors and Supervisors, Trades and Related Workers

7211 Supervisors, Machinists and Related Occupations
7212 Contractors and Supervisors, Electrical Trades and Telecommunications Occupations
7213 Contractors and Supervisors, Pipefitting Trades
7214 Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades
7215 Contractors and Supervisors, Carpentry Trades
7216 Contractors and Supervisors, Mechanic Trades
7217 Contractors and Supervisors, Heavy Construction Equipment Crews
7218 Supervisors, Printing and Related Occupations
7219 Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers

722 Supervisors, Railway and Motor Transportation Occupations

7221 Supervisors, Railway Transport Operations
7222 Supervisors, Motor Transport and Other Ground Transit Operators

723 Machinists and Related Occupations

7231 Machinists and Machining and Tooling Inspectors
7232 Tool and Die Makers

724 Electrical Trades and Telecommunication Occupations

7241 Electricians (Except Industrial and Power System)
7242 Industrial Electricians
7243 Power System Electricians
7244 Electrical Power Line and Cable Workers
7245 Telecommunications Line and Cable Workers
7246 Telecommunications Installation and Repair Workers
7247 Cable Television Service and Maintenance Technicians

725 Plumbers, Pipefitters and Gas Fitters

7251 Plumbers
7252 Steamfitters, Pipefitters and Sprinkler System Installers
7253 Gas Fitters

726 Metal Forming, Shaping and Erecting Occupations[13]

7261 Sheet Metal Workers
7262 Boilermakers
7263 Structural Metal and Platework Fabricators and Fitters
7264 Ironworkers
7265 Welders
7266 Blacksmiths and Die Setters

[13] In data provided by Statistics Canada, unit groups 7265 and 9515 are combined to form *9510 Welders and Soldering Machine Operators*. Hence, data for major group 72 and for minor group 726 does not include unit group 7265.

727 Carpenters and Cabinetmakers

7271 Carpenters
7272 Cabinetmakers

728 Masonry and Plastering Trades

7281 Bricklayers
7282 Cement Finishers
7283 Tilesetters
7284 Plasterers, Drywall Installers and Finishers and Lathers

729 Other Construction Trades

7291 Roofers and Shinglers
7292 Glaziers
7293 Insulators
7294 Painters and Decorators
7295 Floor Covering Installers

731 Machinery and Transportation Equipment Mechanics (Except Motor Vehicle)

7311 Construction Millwrights and Industrial Mechanics (Except Textile)
7312 Heavy-Duty Equipment Mechanics
7313 Refrigeration and Air Conditioning Mechanics
7314 Railway Carmen/women
7315 Aircraft Mechanics and Aircraft Inspectors
7316 Machine Fitters
7317 Textile Machinery Mechanics and Repairers
7318 Elevator Constructors and Mechanics

732 Motor Vehicle Mechanics

7321 Motor Vehicle Mechanics, Technicians and Mechanical Repairers
7322 Motor Vehicle Body Repairers

733 Other Mechanics

7331 Oil and Solid Fuel Heating Mechanics
7332 Electric Appliance Servicers and Repairers
7333 Electrical Mechanics
7334 Motorcycle and Other Related Mechanics
7335 Other Small Engine and Equipment Mechanics

734 Upholsterers, Tailors, Shoe Repairers, Jewellers and Related Occupations

7341 Upholsterers
7342 Tailors, Dressmakers, Furriers and Milliners
7343 Shoe Repairers and Shoemakers
7344 Jewellers, Watch Repairers and Related Occupations

735 Stationary Engineers and Power Station and System Operators

7351 Stationary Engineers and Auxiliary Equipment Operators
7352 Power Systems and Power Station Operators

736 Train Crew Operating Occupations

7361 Railway and Yard Locomotive Engineers
7362 Railway Conductors and Brakemen/women

737 Crane Operators, Drillers and Blasters

7371 Crane Operators
7372 Drillers and Blasters - Surface Mining, Quarrying and Construction
7373 Water Well Drillers

738 Printing Press Operators, Commercial Divers and Other Trades and Related Occupations, n.e.c.

7381 Printing Press Operators
7382 Commercial Divers
7383 Other Trades and Related Occupations

Major Group 74
INTERMEDIATE OCCUPATIONS IN TRANSPORT, EQUIPMENT OPERATION, INSTALLATION AND MAINTENANCE

741 Motor Vehicle and Transit Drivers

7411 Truck Drivers
7412 Bus Drivers and Subway and Other Transit Operators
7413 Taxi and Limousine Drivers and Chauffeurs
7414 Delivery Drivers

742 Heavy Equipment Operators

7421 Heavy Equipment Operators (Except Crane)
7422 Public Works Maintenance Equipment Operators

743 Other Transport Equipment Operators and Related Workers

7431 Railway Yard Workers
7432 Railway Track Maintenance Workers
7433 Deck Crew, Water Transport
7434 Engine Room Crew, Water Transport
7435 Lock and Cable Ferry Operators and Related Occupations
7436 Boat Operators
7437 Air Transport Ramp Attendants

744 Other Installers, Repairers and Servicers

7441 Residential and Commercial Installers and Servicers
7442 Waterworks and Gas Maintenance Workers
7443 Automotive Mechanical Installers and Servicers
7444 Pest Controllers and Fumigators
7445 Other Repairers and Servicers

745 Longshore Workers and Material Handlers

7451 Longshore Workers
7452 Material Handlers

Major Group 76
TRADES HELPERS, CONSTRUCTION LABOURERS AND RELATED OCCUPATIONS

761 Trades Helpers and Labourers

7611 Construction Trades Helpers and Labourers
7612 Other Trades Helpers and Labourers

762 Public Works and Other Labourers, n.e.c.

7621 Public Works and Maintenance Labourers
7622 Railway and Motor Transport Labourers

OCCUPATIONS UNIQUE TO PRIMARY INDUSTRY

Major Group 82
SKILLED OCCUPATIONS IN PRIMARY INDUSTRY

821 Supervisors, Logging and Forestry

8211 Supervisors, Logging and Forestry

822 Supervisors, Mining, Oil and Gas

8221 Supervisors, Mining and Quarrying
8222 Supervisors, Oil and Gas Drilling and Service

823 Underground Miners, Oil and Gas Drillers and Related Workers

8231 Underground Production and Development Miners
8232 Oil and Gas Well Drillers, Servicers, Testers and Related Workers

824 Logging Machinery Operators

8241 Logging Machinery Operators

825 Contractors, Operators and Supervisors in Agriculture, Horticulture and Aquaculture

8251 Farmers and Farm Managers
8252 Agricultural and Related Service Contractors and Managers
8253 Farm Supervisors and Specialized Livestock Workers
8254 Nursery and Greenhouse Operators and Managers
8255 Landscaping and Grounds Maintenance Contractors and Managers
8256 Supervisors, Landscape and Horticulture
8257 Aquaculture Operators and Managers

826 Fishing Vessel Masters and Skippers and Fishermen/women

8261 Fishing Masters and Officers
8262 Fishing Vessel Skippers and Fishermen/women

Major Group 84
INTERMEDIATE OCCUPATIONS IN PRIMARY INDUSTRY

841 Mine Service Workers and Operators in Oil and Gas Drilling

8411 Underground Mine Service and Support Workers
8412 Oil and Gas Well Drilling Workers and Services Operators

842 Logging and Forestry Workers

8421 Chainsaw and Skidder Operators
8422 Silviculture and Forestry Workers

843 Agriculture and Horticulture Workers

8431 General Farm Workers
8432 Nursery and Greenhouse Workers

844 Other Fishing and Trapping Occupations

8441 Fishing Vessel Deckhands
8442 Trappers and Hunters

Major Group 86
LABOURERS IN PRIMARY INDUSTRY

861 Primary Production Labourers

8611 Harvesting Labourers
8612 Landscaping and Grounds Maintenance Labourers
8613 Aquaculture and Marine Harvest Labourers
8614 Mine Labourers
8615 Oil and Gas Drilling, Servicing and Related Labourers
8616 Logging and Forestry Labourers

OCCUPATIONS UNIQUE TO PROCESSING, MANUFACTURING AND UTILITIES

Major Group 92
PROCESSING, MANUFACTURING AND UTILITIES SUPERVISORS AND SKILLED OPERATORS

921 Supervisors, Processing Occupations

9211 Supervisors, Mineral and Metal Processing
9212 Supervisors, Petroleum, Gas and Chemical Processing and Utilities
9213 Supervisors, Food, Beverage and Tobacco Processing
9214 Supervisors, Plastic and Rubber Products Manufacturing
9215 Supervisors, Forest Products Processing
9216 Supervisors, Textile Processing

922 Supervisors, Assembly and Fabrication

9221 Supervisors, Motor Vehicle Assembling
9222 Supervisors, Electronics Manufacturing
9223 Supervisors, Electrical Products Manufacturing
9224 Supervisors, Furniture and Fixtures Manufacturing
9225 Supervisors, Fabric, Fur and Leather Products Manufacturing
9226 Supervisors, Other Mechanical and Metal Product Manufacturing
9227 Supervisors, Other Products Manufacturing and Assembly

923 Central Control and Process Operators in Manufacturing and Processing

9231 Central Control and Process Operators, Mineral and Metal Processing
9232 Petroleum, Gas and Chemical Process Operators
9233 Pulping Control Operators
9234 Papermaking and Coating Control Operators

Major Group 94-95
PROCESSING AND MANUFACTURING MACHINE OPERATORS AND ASSEMBLERS

941 Machine Operators and Related Workers in Metal and Mineral Products Processing

9411 Machine Operators, Mineral and Metal Processing
9412 Foundry Workers
9413 Glass Forming and Finishing Machine Operators and Glass Cutters
9414 Concrete, Clay and Stone Forming Operators
9415 Inspectors and Testers, Mineral and Metal Processing

942 Machine Operators and Related Workers in Chemical, Plastic and Rubber Processing

9421 Chemical Plant Machine Operators
9422 Plastics Processing Machine Operators
9423 Rubber Processing Machine Operators and Related Workers
9424 Water and Waste Plant Operators

943 Machine Operators and Related Workers in Pulp and Paper Production and Wood Processing

9431 Sawmill Machine Operators
9432 Pulp Mill Machine Operators
9433 Papermaking and Finishing Machine Operators
9434 Other Wood Processing Machine Operators
9435 Paper Converting Machine Operators
9436 Lumber Graders and Other Wood Processing Inspectors and Graders

944 Machine Operators and Related Workers in Textile Processing

9441 Textile Fibre and Yarn Preparation Machine Operators
9442 Weavers, Knitters and Other Fabric-Making Occupations
9443 Textile Dyeing and Finishing Machine Operators
9444 Textile Inspectors, Graders and Samplers

945 Machine Operators and Related Workers in Fabric, Fur and Leather Products Manufacturing

9451 Sewing Machine Operators
9452 Fabric, Fur and Leather Cutters
9453 Hide and Pelt Processing Workers
9454 Inspectors and Testers, Fabric, Fur and Leather Products Manufacturing

946 Machine Operators and Related Workers in Food, Beverage and Tobacco Processing

9461 Process Control and Machine Operators, Food and Beverage Processing
9462 Industrial Butchers and Meat Cutters, Poultry Preparers and Related Workers
9463 Fish Plant Workers
9464 Tobacco Processing Machine Operators
9465 Testers and Graders, Food and Beverage Processing

947 Printing Machine Operators and Related Occupations

9471 Printing Machine Operators
9472 Camera, Platemaking and Other Pre-Press Occupations
9473 Binding and Finishing Machine Operators
9474 Photographic and Film Processors

948 Mechanical, Electrical and Electronics Assemblers

9481 Aircraft Assemblers and Aircraft Assembly Inspectors
9482 Motor Vehicle Assemblers, Inspectors and Testers
9483 Electronics Assemblers, Fabricators, Inspectors and Testers
9484 Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing
9485 Assemblers, Fabricators and Inspectors, Industrial Electrical Motors and Transformers
9486 Mechanical Assemblers and Inspectors
9487 Machine Operators and Inspectors, Electrical Apparatus Manufacturing

949 Other Assembly and Related Occupations

9491 Boat Assemblers and Inspectors
9492 Furniture and Fixture Assemblers and Inspectors
9493 Other Wood Products Assemblers and Inspectors
9494 Furniture Finishers and Refinishers
9495 Plastic Products Assemblers, Finishers and Inspectors
9496 Painters and Coaters, Manufacturing
9497 Plating, Metal Spraying and Related Operators
9498 Other Assemblers and Inspectors

951 Machining, Metalworking, Woodworking and Related Machine Operators[14]

9510 Welders and Soldering Machine Operators
9511 Machining Tool Operators
9512 Forging Machine Operators
9513 Woodworking Machine Operators
9514 Metalworking Machine Operators
9515 Welding, Brazing and Soldering Machine Operators
9516 Other Metal Products Machine Operators
9517 Other Products Machine Operators

Major Group 96
LABOURERS IN PROCESSING, MANUFACTURING AND UTILITIES

961 Labourers in Processing, Manufacturing and Utilities

9611 Labourers in Mineral and Metal Processing
9612 Labourers in Metal Fabrication
9613 Labourers in Chemical Products Processing and Utilities
9614 Labourers in Wood, Pulp and Paper Processing
9615 Labourers in Rubber and Plastic Products Manufacturing
9616 Labourers in Textile Processing
9617 Labourers in Food, Beverage and Tobacco Processing
9618 Labourers in Fish Processing
9619 Other Labourers in Processing, Manufacturing and Utilities

[14] In data provided by Statistics Canada, unit groups 7265 and 9515 are combined to form *9510 Welders and Soldering Machine Operators*. Hence, data for major group 95 and for minor group 951 includes unit group 7265.

Major Group 00
SENIOR MANAGEMENT OCCUPATIONS

001 Legislators and Senior Management

0011 Legislators
0012 Senior Government Managers and Officials
0013 Senior Managers - Financial, Communications Carriers and Other Business Services
0014 Senior Managers - Health, Education, Social and Community Services and Membership Organizations
0015 Senior Managers - Trade, Broadcasting and Other Services, n.e.c.*
0016 Senior Managers - Goods Production, Utilities, Transportation and Construction

Major Group 01-09
MIDDLE AND OTHER MANAGEMENT OCCUPATIONS

011 Administrative Services Managers

0111 Financial Managers
0112 Human Resources Managers
0113 Purchasing Managers
0114 Other Administrative Services Managers

012 Managers in Financial and Business Services

0121 Insurance, Real Estate and Financial Brokerage Managers
0122 Banking, Credit and Other Investment Managers
0123 Other Business Services Managers

013 Managers in Communication (Except Broadcasting)

0131 Telecommunication Carriers Managers
0132 Postal and Courier Services Managers

021 Managers in Engineering, Architecture, Science and Information Systems[1]

0210 Engineering, Science and Architecture Managers
0211 Engineering Managers
0212 Architecture and Science Managers
0213 Information Systems and Data Processing Managers

031 Managers in Health, Education, Social and Community Services

0311 Managers in Health Care
0312 Administrators in Post-Secondary Education and Vocational Training
0313 School Principals and Administrators of Elementary and Secondary Education
0314 Managers in Social, Community and Correctional Services

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* n.e.c. = not elsewhere classified
[1]In data provided by Statistics Canada, unit groups 0211 and 0212 are combined to form *0210 Engineering, Science and Architecture Managers*.

041 Managers in Public Administration

0411 Government Managers in Health and Social Policy Development and Program Administration
0412 Government Managers in Economic Analysis, Policy Development and Program Administration
0413 Government Managers in Education Policy Development and Program Administration
0414 Other Managers in Public Administration

051 Managers in Art, Culture, Recreation and Sport

0511 Library, Archive, Museum and Art Gallery Managers
0512 Managers in Publishing, Motion Pictures, Broadcasting and Performing Arts
0513 Recreation and Sport Program and Service Directors

061 Sales, Marketing and Advertising Managers

0611 Sales, Marketing and Advertising Managers

062 Managers in Retail Trade

0621 Retail Trade Managers

063 Managers in Food Service and Accommodation

0631 Restaurant and Food Service Managers
0632 Accommodation Service Managers

064 Managers in Protective Service

0641 Commissioned Police Officers
0642 Fire Chiefs and Senior Firefighting Officers
0643 Commissioned Officers, Armed Forces[2]

065 Managers in Other Services

0651 Other Services Managers

071 Managers in Construction and Transportation

0711 Construction Managers
0712 Residential Home Builders and Renovators
0713 Transportation Managers

072 Facility Operation and Maintenance Managers[3]

0720 Facility Operation and Maintenance Managers
0721 Facility Operation Managers
0722 Maintenance Managers

081 Managers in Primary Production (Except Agriculture)

0811 Primary Production Managers (Except Agriculture)

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[2] This unit group includes occupations unique to the armed forces. However, Statistics Canada data for this unit group includes all commissioned officers. (See introduction.)
[3] In data provided by Statistics Canada, unit groups 0721 and 0722 are combined to form *0720 Facility Operation and Maintenance Managers*.

091 Managers in Manufacturing and Utilities

0911 Manufacturing Managers
0912 Utilities Managers

0011 Legislators

Legislators participate in the activities of a federal, provincial, territorial or local government legislative body or executive council, band council or school board as elected or appointed members.

Examples of titles classified in this unit group

Cabinet Minister
City Councillor
Governor General
Lieutenant-Governor
Mayor
Member of Legislative Assembly
Member of National Assembly
Member of Parliament
Member of Provincial Parliament
Native Band Chief
Premier
Prime Minister
School Board Trustee
Senator

Main duties

Legislators perform some or all of the following duties:

- Enact, amend or repeal laws and regulations
- Participate in developing or amending government policies, programs or procedures
- Represent their government at local, national and international meetings and conferences
- Respond to matters of concern to constituents or the general public
- May serve as minister responsible for a government department or agency and direct senior government managers and officials in the implementation of government policy and the management of that department or agency.

Employment requirements

- Election to a legislative body is required or appointment to positions such as lieutenant-governor or governor general.

Classified elsewhere

- Commissioners, municipal government (in 0012 *Senior Government Managers and Officials)*
- Elected or appointed officials of health care institutions, educational institutions, unions and voluntary organizations (in 0014 *Senior Managers – Health, Education, Social and Community Services and Membership Organizations)*

0012 Senior Government Managers and Officials

Senior Government Managers and Officials plan, organize, direct and control, through middle managers, the major activities of municipal or regional governments or of provincial, territorial or federal departments, boards, agencies or commissions. They establish the direction to be taken by these organizations in accordance with policies made by elected representatives or legislative bodies.

Examples of titles classified in this unit group

Assistant Deputy Minister
Chairperson, Human Rights Commission
Chief Administrative Officer – Regional Municipality
Chief Statistician – Government Services
City Administrator
Deputy Minister
Director General – Government Services
Executive Director – Government Services
High Commissioner

Main duties

Senior Government Managers and Officials perform some or all of the following duties:

- Establish objectives for the organization in accordance with government policy and formulate or approve programs and procedures alone or in conjunction with senior government committees
- Advise elected representatives on policy questions and refer any major policy matters to these representatives for final decision
- Recommend, review and approve documents, briefs and reports submitted by middle managers and senior staff members
- Ensure appropriate systems and procedures are developed and implemented to provide budgetary control
- Co-ordinate department activities with other senior government managers and officials
- Make presentations to legislative and other government committees regarding policies, programs or budgets.

Employment requirements

- A university degree or college diploma is usually required.
- A graduate degree in a related field may be required.
- Several years of managerial experience in the public or private sector are required.

Classified elsewhere

- *Legislators* (0011)
- Middle managers in government (in 041 *Managers in Public Administration*)

0013 Senior Managers – Financial, Communications Carriers and Other Business Services

Senior managers in this unit group plan, organize, direct and control, through middle managers, finance, communications carriers and other business services organizations. They formulate policies which establish the direction to be taken by these organizations either alone or in conjunction with a board of directors.

Examples of titles classified in this unit group

Bank President
Chief Executive Officer (CEO) – Telephone Company
Chief Financial Officer (CFO) – Advertising Agency
Chief Operating Officer – Engineering Firm
Deputy Chief Executive Officer – Life Insurance Company
Executive Director – Credit Union
Executive Vice-President – Real Estate Agency
General Manager – Real Estate Management Company
President – Computing Service Company
Regional Vice-President – Trust Company
Vice-President, Finance – Holding Company
Vice-President, Marketing – Office Personnel Service
Vice-President, Operations – Satellite Communication Service
Vice-President, Human Resources – Bank

Main duties

Senior managers in this unit group perform some or all of the following duties:

- Establish objectives for the company and formulate or approve policies and programs
- Authorize and organize the establishment of major departments and associated senior staff positions
- Allocate funds to implement organization policies and programs; establish financial and administrative controls; formulate and approve promotion campaigns; and approve overall human resources planning
- Select or approve the selection of middle managers, directors or other executive staff
- Co-ordinate the work of regions, divisions or departments
- Represent the organization or delegate representatives to act on behalf of the organization in negotiations or other official functions.

Senior managers in this unit group may specialize in areas such as finance, marketing or human resources or in a particular service area.

Employment requirements

- A university degree or college diploma in business administration, commerce, computer science or other discipline related to the service provided is usually required.
- Several years of experience as a middle manager in financial, communications carriers or other business services are usually required.
- Specialization in a particular functional area or service may occur either through specific university or college training in that area or through previous experience.
- Senior managers in finance usually require a professional accounting designation.

Additional information

- The boundaries of this unit group are defined by the Standard Industrial Classification (SIC). Included are senior managers in the following industries: communications carriers, finance and insurance, real estate and business services.

Classified elsewhere

Related middle managers are classified in the following minor groups:

- *Managers in Communication (Except Broadcasting)* (013)
- *Managers in Engineering, Architecture, Science and Information Systems* (021).
- *Managers in Financial and Business Services* (012)

0014 Senior Managers – Health, Education, Social and Community Services and Membership Organizations

Senior managers in this unit group plan, organize, direct and control, through middle managers, membership and other organizations or institutions that deliver health, education, social or community services. They formulate policies which establish the direction to be taken by these organizations, either alone or in conjunction with a board of directors.

Examples of titles classified in this unit group

Chairperson – Arts and Culture Association
Chairperson – Scientific Association
Chief Financial Officer (CFO) – Education Institution
Corporate Controller – Social Services Institution
Executive Director – Health Services Institution
Executive Director – Professional Association
Executive Director – Voluntary Organization
General Manager – Membership Organization
President – Business Association
President – Labour Organization
President – Music Guild

Main duties

Senior managers in this unit group perform some or all of the following duties:

- Establish objectives for the organization or institution and formulate or approve policies and programs
- Authorize and organize the establishment of major departments and associated senior staff positions
- Allocate funds to implement an organization's policies and programs; establish financial and administrative controls; formulate and approve promotion campaigns; and approve overall personnel planning
- Select or approve the selection of middle managers, directors or other executive staff
- Co-ordinate the work of regions, divisions or departments
- Represent the organization or institution or delegate representatives to act on behalf of the organization in negotiations or other official functions.

Senior managers in this unit group may specialize in areas such as finance, marketing, human resources or in a particular service area.

Employment requirements

- A university degree or college diploma in business administration, hospital administration, finance or other discipline related to the service provided is usually required.
- Several years of experience as a middle manager in a related institution or organization are usually required.
- Specialization in a particular functional area or service may occur either through specific university or college training in that area or through previous experience.
- Senior managers in finance usually require a professional accounting designation.

Additional information

- The boundaries of this unit group are defined by the Standard Industrial Classification (SIC). Included are senior managers in the following industries: educational services, health and social services and membership organizations.

Classified elsewhere

Related middle managers are classified in the following unit groups:

- *Administrators in Post-secondary Education and Vocational Training* (0312)
- *Government Managers in Education Policy Development and Program Administration* (0413)
- *Government Managers in Health and Social Policy Development and Program Administration* (0411)
- *Managers in Health Care* (0311)

0014 Senior Managers – Health, Education, Social and Community Services and Membership Organizations

- *Managers in Social, Community and Correctional Services* (0314)
- *Other Managers in Public Administration* (0414)
- *School Principals and Administrators of Elementary and Secondary Education* (0313)

0015 Senior Managers – Trade, Broadcasting and Other Services, n.e.c.

Senior managers in this unit group plan, organize, direct and control, through middle managers, trade, broadcasting and other service companies not elsewhere classified. They formulate policies which establish the direction to be taken by these companies, either alone or in conjunction with a board of directors.

Examples of titles classified in this unit group

Chief Executive Officer (CEO) – Vacation Tour Operation
Chief Financial Officer (CFO) – Professional Sports Club
Corporate Controller – Restaurant Chain
Executive Director – Automobile Association
General Manager – Cleaning Service
President – Department Store
Regional Vice-President – Hotel Chain
Vice-President, Engineering – Television Broadcasting Service
Vice-President, Finance – Food Wholesaler
Vice-President, Marketing – Grocery Store Chain
Vice-President, Operations – Radio Broadcasting Service

Main duties

Senior managers in this unit group perform some or all of the following duties:

- Establish objectives for the company and formulate or approve policies and programs
- Authorize and organize the establishment of major departments and associated senior staff positions
- Allocate funds to implement company policies and programs; establish financial and administrative controls; formulate and approve promotion campaigns; and approve overall personnel planning
- Select or approve the selection of middle managers, directors or other executive staff
- Co-ordinate the work of regions, divisions or departments
- Represent the company or delegate representatives to act on behalf of the company in negotiations or other official functions.

Senior managers in this unit group may specialize in areas such as finance, marketing or human resources or in the selling of a particular product or provision of a particular service.

Employment requirements

- A university degree or college diploma in business administration, finance or other discipline related to the service provided is usually required.
- Several years of experience as a middle manager in trade, broadcasting or other service are usually required.
- Specialization in a particular functional area or service is possible either through specific university or college training in that area or through previous experience.
- Senior managers in finance usually require a professional accounting designation.

Additional information

- The boundaries of this unit group are defined by the Standard Industrial Classification (SIC). Included are senior managers in the following industries: broadcasting, wholesale trade, retail trade, accommodation and food and beverage service, and other services not elsewhere classified.

Classified elsewhere

- Related middle managers are classified in the following unit and minor groups:
- *Managers in Art, Culture, Recreation and Sport* (051)
- *Managers in Food Service and Accommodation* (063)
- *Managers in Retail Trade* (062)
- *Other Services Managers* (0651)

0112 Human Resources Managers

Human Resources Managers plan, organize, direct and control the operations of human resources and personnel departments, and develop and implement policies, programs and procedures regarding human resource planning, recruitment, collective bargaining, training and development, occupation classification and pay and benefit administration. Human Resources Managers are employed throughout the private and public sectors.

Examples of titles classified in this unit group

Administrator, Human Resources
Compensation Manager
Director, Employment Equity
Director, Human Resources
Director, Labour Relations
Director, Personnel
Human Resources Manager
Industrial Relations Manager
Labour Relations Manager
Manager, Occupational Health and Safety
Manager, Staff Training and Development
Pay and Benefits Manager
Personnel Manager
Recruiting Manager

Main duties

Human Resources Managers perform some or all of the following duties:

- Plan, organize, direct and control the operations of human resources or personnel departments
- Plan human resource requirements in conjunction with other departmental managers
- Co-ordinate internal and external training and recruitment activities
- Develop and implement labour relations policies and procedures and negotiate collective agreements
- Administer employee development, language training and health and safety programs
- Advise and assist other departmental managers on interpretation and administration of personnel policies and programs
- Oversee the classification and rating of occupations
- Organize and conduct employee information meetings on employment policy, benefits and compensation.

Employment requirements

- A bachelor's degree in a field related to personnel management, such as business administration, industrial relations, commerce or psychology
  or
  Completion of a professional development program in personnel administration is required.
- Several years of experience as a personnel officer or human resource specialist are required.

Additional information

- Progression to senior management positions is possible with experience.

Classified elsewhere

- *Specialists in Human Resources* (1121)

0113 Purchasing Managers

Purchasing Managers plan, organize, direct and control the activities of a purchasing department and develop and implement the purchasing policies of a business or institution. They are employed throughout the public and private sectors.

Examples of titles classified in this unit group

Contract Manager
Director, Purchasing
Director, Procurement Operations
Food Purchasing Manager
Manager, Purchasing Contracts
Material Manager
Purchasing Manager

Main duties

Purchasing Managers perform some or all of the following duties:

- Plan, organize, direct and control the purchasing activities of an establishment
- Develop purchasing policies and procedures and control purchasing department budget
- Identify vendors of materials, equipment or supplies
- Evaluate cost and quality of goods or services
- Negotiate or oversee the negotiation of purchase contracts
- Participate in the development of specifications for equipment, products or substitute materials
- Review and process claims against suppliers
- Interview, hire and oversee training of staff.

Employment requirements

- A bachelor's degree or college diploma in business administration, commerce or economics is usually required.
- Purchasing managers responsible for units purchasing specialized materials or business services may require a related university degree or diploma. For example, a bachelor's degree or college diploma in engineering may be required for purchasing managers responsible for purchasing industrial products.
- Several years of experience as a purchasing agent or officer are required.

Classified elsewhere

- *Purchasing Agents and Officers* (1225)
- *Retail and Wholesale Buyers* (6233)
- Warehouse managers (in 0721 *Facility Operation Managers*)

0114 Other Administrative Services Managers

This unit group includes managers who plan, organize, direct and control departments responsible for records management, security services, admissions and other administrative services not elsewhere classified. Also included in this unit group are managers responsible for departments involved in two or more of the following activities: finance, human resources, purchasing computer systems or administrative services. Managers in this unit group are employed throughout the public and private sector.

Examples of titles classified in this unit group

Admissions Director
Arts Administrator
Business Manager, Non-profit Organization
Inventory Control Manager
Manager, Administrative Services
Manager, Security
Manager, Support Services
Records Administrator
Regional Manager, Administration

Main duties

Managers in this unit group perform some or all of the following duties:

- Plan, organize, direct and control the operations of a department providing a single administrative service or several administrative services
- Direct and advise staff engaged in providing records management, security, finance, purchasing, human resources or other administrative services
- Plan, administer and control budgets for contracts, equipment and supplies
- Prepare reports and briefs for management committees evaluating administrative services
- Interview, hire and oversee training for staff.

Employment requirements

- A bachelor's degree or college diploma in business administration or a related administrative services field is usually required.
- Several years of experience at a professional level in business administration, finance or administrative services are usually required.

Classified elsewhere

- *Facility Operation Managers* (0721)
- *Financial Managers* (0111)
- *Human Resources Managers* (0112)
- *Information Systems and Data Processing Managers* (0213)
- *Maintenance Managers* (0722)
- *Purchasing Managers* (0113)

0121 Insurance, Real Estate and Financial Brokerage Managers

Insurance, Real Estate and Financial Brokerage Managers plan, organize, direct and control the activities of departments or establishments that provide insurance, mortgage, real estate and investment services. They are employed by insurance companies, real estate firms, stockbrokers, investment dealers, mortgage brokers and security and commodity exchanges.

Examples of titles classified in this unit group

Bond Manager
Commodities Trading Manager
Financial Brokerage Manager
Insurance Claims Manager
Insurance Manager
Investment Manager
Mortgage Broker Manager
Real Estate Manager
Securities Sales Director
Trading Floor Manager

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Insurance managers plan, organize, direct and control the operations of an establishment or department that provides automobile, fire, life, property or other types of insurance services.
- Real estate managers plan, organize, direct and control the operations of an establishment or department that buys, sells and leases residential and commercial property for clients.
- Mortgage broker managers plan, organize, direct and control the operations of an establishment or department that find lenders or lending institutions on behalf of clients seeking a mortgage.
- Securities managers plan, organize, direct and control the operation of an establishment or department that buys and sells stocks, bonds and other forms of investments on behalf of individual or institutional clients.

Employment requirements

- A university degree or college diploma in business administration, economics or other related field is usually required.
- Several years of experience within the appropriate industry are usually required.
- Licensure appropriate to the service sold, such as real estate, mortgage, securities or insurance, may be required.

Additional information

- There is no mobility between the different types of managers in this unit group.
- Progression to senior management positions is possible with experience.

Classified elsewhere

- *Banking, Credit and Other Investment Managers* (0122)
- *Financial Managers* (0111)
- *Other Business Services Managers* (0123)
- *Sales, Marketing and Advertising Managers* (0611)

0122 Banking, Credit and Other Investment Managers

Banking, Credit and Other Investment Managers plan, organize, direct and control the activities of financial establishments or operational departments within such establishments, or credit departments in industrial and commercial establishments. Banking managers are employed by banks, trust companies and credit unions. Credit managers are employed by credit departments in department stores, utility companies, car dealerships, insurance companies or other industrial or commercial organizations. Other investment managers are employed by credit card companies, consumer loan companies, mutual fund investment firms, mortgage investment companies or other financial establishments concerned with extending loans and financing and investments.

Examples of titles classified in this unit group

Bank Manager
Collection Centre Manager
Commercial Banking Manager
Corporate Banking Centre Manager
Credit and Accounts Manager
Credit Union Manager
Manager, Credit Card Centre
Manager, Banking Operations
Mortgage and Consumer Credit Manager
Operations Manager, Credit Card Company
Regional Credit Manager
Trust Company Manager

Main duties

Banking managers perform some or all of the following duties:

- Plan, organize, direct and control the branch operations of a bank, trust company, credit union or similar financial institution or of a department in such an institution responsible for administering personal and commercial loans, accepting deposits, buying and selling securities, operating investment funds, administering trusts, settling estates or other related activities
- Ensure the institution's policies and procedures are followed according to established guidelines and make recommendations for improvement
- Promote the sale of loan, investment and other banking services to attract corporate and individual customers
- Interview corporate and individual customers and respond to customer enquiries
- Analyze, review and approve or reject loan and credit applications
- Monitor processing of loan applications and credit investigations
- Oversee preparation of monthly financial and branch progress reports
- Recruit personnel and oversee their training.

Credit managers perform some or all of the following duties:

- Plan, organize, direct and control the activities of a credit department in an industrial or commercial organization
- Administer corporate, commercial and personal loan accounts
- Evaluate and review loan and credit applications
- Approve or reject credit applications, establish credit limits and determine repayment plans or schedules
- Ensure collection of overdue or delinquent accounts
- Ensure credit policies and procedures are followed according to established guidelines
- Prepare credit and loan reports
- Recruit credit personnel and oversee their training.

Employment requirements

- A university degree or college diploma in business administration, commerce, economics or a related field is usually required.
- Completion of company or other management training programs is usually required.
- Several years of experience within the industry, including supervisory experience, are required.

Additional information

- Progression to senior management positions in this field is possible with experience.

Classified elsewhere

- Mortgage brokerage managers (in 0121 *Insurance, Real Estate and Financial Brokerage Managers*)
- *Other Business Services Managers* (0123)
- *Senior Managers – Financial, Communications Carriers and Other Business Services* (0013)

0123 Other Business Services Managers

Managers in this unit group plan, organize, direct and control the operations of establishments that provide services to business, such as management consulting, market research, personnel services, payroll services, advertising services and security services.

Examples of titles classified in this unit group

Accounting Firm Manager
Employment Agency Manager
Legal Firm Manager
Manager, Management Consulting Service
Manager, Market Research Service
Manager, Nursing Registry
Manager, Security Service
Payroll Service Manager
Personnel Agency Manager
Security Service Manager

Main duties

Managers in this unit group perform some or all of the following duties:

- Plan, organize, direct and control the operations of establishments that provide services to business such as management consulting, market research, personnel services, payroll services, advertising services or security services
- Plan and organize these service establishments and develop policies and procedures
- Direct and advise staff in the development and implementation of sales or marketing strategies
- Plan, administer and control budgets for client projects, contracts, equipment and supplies
- Assist staff with administrative or technical problems
- Interview, hire and provide training for staff.

Employment requirements

- A bachelor's degree or college diploma in a field related to the business service provided is usually required.
- Several years of experience in a field related to the business service provided are usually required.
- Licences, certificates or registration may be required for some business services managers. For example, accounting firm managers usually require an accounting certification.

Classified elsewhere

- *Architecture and Science Managers* (0212)
- *Banking, Credit and Other Investment Managers* (0122)
- *Engineering Managers* (0211)
- *Information Systems and Data Processing Managers* (0213)
- *Insurance, Real Estate and Financial Brokerage Managers* (0121)
- *Senior Managers — Financial, Communications Carriers and Other Business Services* (0013)

0131 Telecommunication Carriers Managers

This unit group includes managers who plan, organize, direct and control the operations of a telecommunications establishment, department or facility. They are employed by telephone, telegraph, satellite and other telecommunications companies.

Examples of titles classified in this unit group

Director, Switching Systems
Facilities Manager, Telecommunications
Installation Manager, Telecommunications
Manager, Network Installation
Manager, Telecommunications Services
Microwave Facilities Manager
Network Operations Manager
Network Services Manager
Operations and Transmission Services Manager
Regional Manager, Telecommunications System
Telecommunications Manager
Telephone Company District Manager

Main duties

Telecommunication Carriers Managers perform some or all of the following duties:

- Plan, organize, direct and control the operations of a telecommunications establishment, department or facility
- Consult with senior managers to establish policies concerned with the development, operation and maintenance of telecommunications services
- Direct and control telecommunications traffic volume and flow within assigned area, through subordinate supervisors and technical staff
- Analyze and evaluate telecommunications installation, operation and maintenance services and make recommendations for improvement
- Ensure compliance with telecommunications regulations and directives of government regulatory agencies
- Liaise with representatives of related or connecting companies to resolve joint telecommunications problems and ensure efficient telecommunications system operations
- Recruit personnel and oversee their training.

Employment requirements

- A university degree in science, electrical engineering or a related field is usually required.
- Several years of experience in a related technical profession, including supervisory experience, are usually required.

Additional information

- Progression to senior management positions in telecommunications is possible with experience.

Classified elsewhere

- *Senior Managers – Financial, Communications Carriers and Other Business Services* (0013)
- Broadcasting managers (in 0512 *Managers in Publishing, Motion Pictures, Broadcasting and Performing Arts*)

0132 Postal and Courier Services Managers

Postal and Courier Services Managers plan, organize, direct and control the activities and operations in postal facilities and in establishments that provide courier services. They are employed by Canada Post Corporation and by courier companies.

Examples of titles classified in this unit group

Courier Service Manager
Mail Processing Plant Manager
Manager, Collection and Delivery Operations
Manager, Mail Operations
Messenger Service Manager
Parcel Processing Plant Manager
Post Office Manager
Postal Station Superintendent
Production Control Manager – Postal Service

Main duties

Postal and Courier Services Managers perform some or all of the following duties:

- Plan, organize, direct and control the activities and operations of postal facilities and courier service companies, or of operational divisions within Canada Post and courier service companies
- Co-ordinate the duties of supervisors and other staff
- Manage the accurate and expedient movement of mail and parcels through postal and parcel sorting facilities
- Review effectiveness of assigned operations and implement changes to postal and courier operations
- Prepare and submit budget estimates and administer the expenditures of postal and courier facilities
- Interview, hire and provide training for staff.

Employment requirements

- A university degree or college diploma is usually required.
- Several years of supervisory experience or operational experience within a postal or courier facility are usually required.

Classified elsewhere

- Postmasters (in 1214 *Supervisors, Mail and Message Distribution Occupations*)

0211 Engineering Managers

Engineering Managers plan, organize, direct and control the activities of an engineering department, service or firm. They are employed by a wide range of private sector and government establishments and by consulting engineering and scientific research companies.

Examples of titles classified in this unit group

Director, Engineering Research and Development
Electrical Engineering Manager
Engineering Department Manager
Engineering Manager
Manager, Telecommunications Engineering
Production Engineering Manager

Main duties

Engineering Managers perform some or all of the following duties:

- Plan, organize, direct and control the activities and operations of an engineering department, service or firm
- Develop and implement policies, standards and procedures for the engineering and technical work performed in the department, service, laboratory or firm
- Consult and negotiate with clients to prepare specifications, explain proposals and present engineering reports and findings
- Assign, co-ordinate and review the technical work of the department or project teams
- Recruit personnel and oversee development and maintenance of staff competence in required areas
- May participate directly in the design, development and inspection of technical projects or in the engineering work of the department.

Employment requirements

- A bachelor's degree in engineering is required.
- Extensive experience in an engineering discipline, including supervisory experience, is required.
- Registration as a professional engineer by a provincial association of professional engineers is usually required.

Additional information

- Mobility to other technical managerial positions or to research or senior management positions is possible with experience.
- In data provided by Statistics Canada, unit groups 0211 and 0212 are combined to form 0210 *Engineering, Science and Architecture Managers*.

Classified elsewhere

- *Architecture and Science Managers* (0212)
- *Construction Managers* (0711)
- *Information Systems and Data Processing Managers* (0213)
- *Manufacturing Managers* (0911)
- *Transportation Managers* (0713)
- *Utilities Managers* (0912)
- Engineers and supervisors of engineers (in Major Group 21 *Professional Occupations in Natural and Applied Sciences*)

0212 Architecture and Science Managers

Architecture and Science Managers plan, organize, direct and control the activities of an architecture, landscape architecture, scientific or statistical department, service or firm. They are employed by a wide range of private sector and government establishments as well as architectural firms and scientific research companies.

Examples of titles classified in this unit group

Architectural Manager
Director, Agricultural Chemical Branch
Director of Research, Forestry
Director of Research, Manufacturing
Director of Research, Mining
Landscape Architecture Manager
Manager, Life Sciences Program
Manager, Petroleum Geology Department
Research Department Manager
Statistical Service Manager

Main duties

Architectual and Science Managers perform some or all of the following duties:

- Plan, organize, direct and control the activities and operations of an architecture, landscape architecture, scientific research and development laboratory or quality control department, service or firm
- Develop and implement policies, standards and procedures for the architectural, scientific and technical work performed in the department, service, laboratory or firm
- Assign, co-ordinate and review the technical work of the department or project teams
- Recruit personnel and oversee development and maintenance of staff competence in required areas
- May participate directly in the design, development and inspection of technical projects or in the theoretical or applied scientific work of the department
- May consult and negotiate with clients to prepare specifications, explain proposals or present architectural or scientific research reports and findings.

Employment requirements

- Architecture managers require a degree in architecture, licensing as a professional architect and several years of experience as an architect.
- Science and other managers in this unit group require a master's or doctorate degree in a scientific discipline and several years of experience in a related scientific discipline.
- Landscape architecture managers require a degree in landscape architecture, licensing as a professional landscape architect and several years of experience as a landscape architect.

Additional information

- Progression to senior management positions in the respective fields is possible with experience.
- In data provided by Statistics Canada, unit groups 0211 and 0212 are combined to form 0210 *Engineering, Science and Architecture Managers.*

Classified elsewhere

- *Engineering Managers* (0211)
- *Information Systems and Data Processing Managers* (0213)
- *Primary Production Managers (Except Agriculture)* (0811)
- Science professionals and supervisors of science professionals (in Major Group 21 *Professional Occupations in Natural and Applied Sciences*)

0213 Information Systems and Data Processing Managers

Information Systems and Data Processing Managers plan, organize, direct and control the activities of computerized information systems and electronic data processing (EDP) departments and companies. They are employed throughout the public and private sectors.

Examples of titles classified in this unit group

Computer Systems Manager
Data Centre Manager
Data Processing Director
Director, Management Information Systems (MIS)
EDP Manager
Information Systems Manager
Manager, Data Processing and Systems Analysis
Systems Development Manager

Main duties

Information Systems and Data Processing Managers perform some or all of the following duties:

- Plan and direct the operations of information systems and electronic data processing (EDP) departments and companies
- Develop and implement policies and procedures for electronic data processing and computer systems operations and development
- Meet with clients to discuss data processing or system requirements and specifications
- Analyze information system requirements and performance, and develop and implement new and modified systems
- Control the budget and expenditures of the department or company
- Recruit and supervise computer analysts, programmers and other personnel and oversee their professional development and training.

Employment requirements

- A bachelor's or master's degree in computer science, business administration, commerce or engineering is usually required.
- Several years of experience in computer programming and systems analysis or in a computer application area, including supervisory experience, are required.

Classified elsewhere

- *Computer Programmers* (2163)
- *Computer Systems Analysts* (2162)
- Record systems analysts (in 1122 *Professional Occupations in Business Services to Management*)
- Computer operator supervisors (in 1211 *Supervisors, General Office and Administrative Support Clerks*)
- Computer services company presidents (in 0013 *Senior Managers – Financial, Communications Carriers and Other Business Services*)

0311 Managers in Health Care

This unit group includes managers who plan, organize, direct and control the delivery of health care services, such as diagnosis and treatment, nursing and therapy, within institutions that provide health care services. They are employed in hospitals, medical clinics, nursing homes and other health care establishments.

Examples of titles classified in this unit group

Chief of Anaesthesia
Chief of Emergency Medicine
Chief of Medical Staff
Director, Home Care Services
Director, Rehabilitation Services
Director of Clinical Medicine
Director of Dietetics
Director of Laboratory Medicine
Director of Nursing
Director of Occupational Therapy
Director of Physiotherapy
Director of Surgery
Medical Clinic Director
Residential Program Manager, Mental Health Centre

Main duties

Managers in Health Care perform some or all of the following duties:

- Plan, organize, direct and control the delivery of health care services within a department or establishment
- Consult with boards of directors and senior managers to maintain and establish standards for the provision of health care services
- Develop evaluation systems to monitor the quality of health care given to patients
- Monitor the use of diagnostic services, in-patient beds and facilities to ensure effective use of resources
- Develop and implement plans for new programs, special projects, new material and equipment acquisitions and future staffing levels in their department or establishment
- Plan and control departmental or establishment budget
- Represent the department or establishment at meetings with government officials, the public, the media and other organizations
- Supervise health care supervisors and professionals
- Recruit health care staff of the department or establishment.

Managers in health care specialize in administering the provision of specific health care services such as dietetics, clinical medicine, laboratory medicine, nursing, physiotherapy or surgery.

Employment requirements

- Administrators of departments such as surgery, clinical medicine or laboratory medicine are usually required to have the education and training of a specialist physician.
- Administrators of other departments, such as nursing, dietetics or physiotherapy, are usually required to have the education and training of the medical professionals in that department.
- Several years of experience in the relevant profession, including supervisory experience, are usually required.
- Certification in the relevant profession is required.

Additional information

- There is little or no mobility between departments in different medical specializations.
- Progression to senior management positions in health care services is possible with experience.

Classified elsewhere

- *Government Managers in Health and Social Policy Development and Program Administration* (0411)
- *Senior Managers – Health, Education, Social and Community Services and Membership Organizations* (0014)

0312 Administrators in Post-Secondary Education and Vocational Training

This unit group includes faculty administrators and registrars of colleges or universities and administrators of vocational training schools. Faculty administrators manage the academic and related activities of faculties of colleges or universities. Registrars manage registration activities and academic records systems of colleges or universities. Administrators of vocational training schools manage the operations of private vocational schools specializing in trades, technology, business or other vocational subjects.

Examples of titles classified in this unit group

Academic Dean
Community College Dean
Dean of Adult Education
Dean, Faculty of Science
Dean, School of Technology
Dean, School of Nursing
Manager, Aviation School
Manager, Business School
Manager, Trade School
Registrar, Community College
Student Activities Dean
University Registrar

Main duties

Faculty administrators perform some or all of the following duties:

- Plan, organize, direct and control academic and related activities of a college or university faculty
- Recommend and approve faculty appointments
- Recommend curriculum revisions and additions and approve scheduling of courses
- Direct, through subordinate staff, activities such as research and curriculum development
- Plan, administer and control budgets for projects, programs, support services and equipment
- Advise president or rector of university or college
- Participate in activities of various faculty and college committees.

Registrars perform some or all of the following duties:

- Plan, organize, direct and control the registration activities and academic records system of a college or university
- Review registration statistics and consult with faculty officials to develop registration policies
- Direct activities of staff and others engaged in compiling information on courses, schedules and requirements for admission and graduation.

Administrators of vocational training schools perform some or all of the following duties:

- Plan, organize, direct and control the activities of a private college or institute specializing in trades, technology or business
- Develop curriculum for training programs
- Consult with government regulatory and licencing agencies to ensure conformance to provincial standards
- Plan, administer and control budgets for projects, programs, support services and equipment
- May recruit and hire teachers and other staff
- May teach.

Employment requirements

- Faculty administrators require a graduate degree in a field related to the academic faculty and several years of experience as a university professor or college teacher.
- Registrars require an undergraduate degree in business administration or a related field and several years of experience in registration administration.
- Administrators of vocational training schools usually require an undergraduate degree in business administration or expertise in a subject of instruction.

0312 Administrators in Post-Secondary Education and Vocational Training

Additional information

- Progression to some senior management positions in education is possible with experience.
- There is no mobility among the various types of administrators in this group.

Classified elsewhere

- *College and Other Vocational Instructors* (4131)
- *School Principals and Administrators of Elementary and Secondary Education* (0313)
- *University Professors* (4121)
- Administrators of non-vocational training schools, such as driving schools (in 0651 *Other Services Managers*)
- College rectors (in 0014 *Senior Managers – Health, Education, Social and Community Services and Membership Organizations)*
- University presidents (in 0014 *Senior Managers – Health, Education, Social and Community Services and Membership Organizations*)

0313 School Principals and Administrators of Elementary and Secondary Education

School principals plan, organize, direct and control the activities of teachers and other staff of an elementary or secondary school. They are employed by public and private schools. Administrators of elementary and secondary education plan, organize, direct and control the academic affairs of a school system. They are employed by school boards.

Examples of titles classified in this unit group

Administrator, Board of Education
Chief Superintendent, Schools
Director of Education, Correctional Institution
Director, School for Hearing Impaired
District School Superintendent
Headmaster, Private School
School Principal
Secondary School Principal
Superintendent of Elementary Education
Superintendent of Secondary Schools
Superintendent of Special Education
Vice-Principal, School

Main duties

School principals perform some or all of the following duties:

- Plan, organize, direct and control, through department heads or supervisors, the activities of teachers and support staff
- Review programs to ensure conformance to school board or provincial standards and develop programs within limits of authority
- Co-ordinate teaching activities of the institution by making personnel assignments, determining class size and preparing timetables
- Organize and maintain procedures for the keeping of records
- Prepare and administer institution or program budget
- Direct and co-ordinate school maintenance services and the use of school facilities
- May recruit and hire teachers and other staff
- May teach.

Administrators of elementary and secondary education perform some or all of the following duties:

- Plan, organize, direct and control, through school principals, the academic affairs of a school district
- Evaluate curriculum, teaching methods and community participation in programs for a school district and revise programs as required
- Develop and administer programs for the education and training of students and adults
- Make recommendations concerning the annual operating budget of a school district
- Direct or supervise the recruitment, appointment, training, evaluation and promotion of teaching personnel.

Employment requirements

- A bachelor's degree in education is required.
- A master's degree in education may be required.
- Several years of experience as a senior teacher or department head are required.
- A teacher's certificate for the province of employment is required.

Additional information

- There is little mobility between institutional settings, for example, between elementary and secondary schools.

Classified elsewhere

- *Administrators in Post-Secondary Education and Vocational Training* (0312)
- *Education Policy Researchers, Consultants and Program Officers* (4166)
- *Government Managers in Education Policy Development and Program Administration* (0413)
- *Senior Managers – Health, Education, Social and Community Services and Membership Organizations* (0014)

0314 Managers in Social, Community and Correctional Services

This unit group includes managers who plan, organize, direct and control the programs and activities of social service and community agencies, correctional institutions, counselling departments, labour organizations, professional associations, political parties and non-governmental organizations involved with promoting social issues.

Examples of titles classified in this unit group

Administrator, Child Welfare Services
Area Manager, Family Services
Association Director
Children's Aid Society Director
Correctional Institution Director
Detention Centre Director
Director of Correctional Treatment and Training
Director, Community Centre
Environmental Group Director
Income Maintenance Director
Labour Organization Manager
Membership Services Manager
Political Organization Manager
Prison Warden
Regional Administrator, Social Services
Social Assistance Director
Social Work Director
Trade Association Manager
Volunteer Services Director

Main duties

Managers in this unit group perform some or all of the following duties:

- Plan, organize, direct and control the delivery of social and community service programs such as income maintenance, children's aid and emergency housing services
- Manage the operations and activities of correctional facilities and detention centres
- Administer the programs of non-governmental organizations involved with social issues such as health care, human rights, consumer protection, international development and environmental protection
- Administer programs of membership organizations such as political parties, labour organizations, business and professional associations
- Establish administrative procedures to meet objectives set by board of directors or senior management
- Direct and advise professional and non-professional staff delivering services and programs to the general public and to the organization or association membership
- Plan, administer and control budgets for programs, equipment and support services
- Represent their respective organizations for the purpose of government liaison and media relations
- Participate in policy development by preparing reports and briefs for management committees and working groups
- Hire and provide training for professional and non-professional staff.

Employment requirements

- Managers in social, community and correctional services usually require a master's degree in a social science or administrative discipline
  and
  Several years of experience in a related occupation, such as a community and social service worker, social or health policy researcher, consultant or program officer, probation or parole officer, or social worker.
- Managers of associations and membership organizations require extensive experience in a related occupation, trade or industry.

Additional information

- Progression to senior management positions in social, community and correctional services is possible with additional training and experience.

Classified elsewhere

- *Government Managers in Health and Social Policy Development and Program Administration* (0411)
- *Senior Managers – Health, Education, Social and Community Services and Membership Organizations* (0014)

0411 Government Managers in Health and Social Policy Development and Program Administration

Government managers in this unit group plan, organize, direct and control the development and administration of health care policies, social policies, and related programs designed to protect and promote the health and social welfare of individuals and communities. These managers are employed by government departments and agencies.

Examples of titles classified in this unit group

City Medical Officer of Health
Director, Health Information and Promotion
Director, Housing Policy and Development
Immigration and Settlement Director
Manager, Social Services Planning
Manager, Health Program Operations
Social Services Director

Main duties

Government Managers in Health and Social Policy Development and Program Administration perform some or all of the following duties:

- Participate in the development of health or social policies by providing advice to senior government managers
- Organize departmental unit and establish procedures to meet departmental objectives set by senior management
- Direct and advise health or social policy researchers, consultants or program officers who conduct research, prepare documents or administer programs for individuals and communities in areas such as health and social services, employment and immigration, labour or housing
- Plan, administer and control budgets for research and administration, support services and equipment and supplies
- Organize and direct committees and working groups to plan, manage or evaluate health and social services projects and programs
- Interview, hire and provide training for staff.

Employment requirements

Government Managers in Health Policy Development and Program Administration

- A bachelor's degree or college diploma in health science, hospital administration or public administration or a bachelor's degree in social science is required.
- A graduate degree in a health, social science or administrative discipline may be required.
- Several years of experience as a health or social policy researcher, consultant or program officer are usually required.
- For some government managers in health policy development and program administration, certification in the relevant health profession is required. For example, city medical officers of health must be physicians.

Government Managers in Social Policy Development and Program Administration

- A bachelor's degree or a college diploma in a social science discipline, such as sociology or economics, or an administrative discipline, such as public administration, is required.
- A graduate degree in a social science or an administrative discipline may be required.
- Several years experience as a social policy researcher, consultant or program officer is usually required.

0411 Government Managers in Health and Social Policy Development and Program Administration

Additional information

- Progression to senior management positions in the health and social policy fields is possible with experience.

Classified elsewhere

- *Government Managers in Economic Analysis, Policy Development and Program Administration* (0412)
- *Government Managers in Education Policy Development and Program Administration* (0413)
- *Managers in Health Care* (0311)
- *Managers in Social, Community and Correctional Services* (0314)
- *Other Managers in Public Administration* (0414)
- *Senior Government Managers and Officials* (0012)

0412 Government Managers in Economic Analysis, Policy Development and Program Administration

Government managers in this unit group plan, organize, direct, and control economic policy, research and programs in areas of government activity such as taxation, international trade, labour markets, transportation or agriculture. They also plan and direct policies and programs to promote industrial and commercial business development in urban and rural areas. They are employed in government departments and agencies.

Examples of titles classified in this unit group

Chief, Economic Analysis
Chief, Forest Resource Analysis
Customs Manager
Director, Business Development
Director, Economic Development
Director, Economic Policy Analysis
Director, Energy Market Analysis
Director, Excise-tax Programs
Director, Farm Products Marketing
Manager, Grain Market Analysis
Manager, Tax Policy Research
Manager, Revenue Programs
Taxation Manager
Tourism Development Director
Trade Development Director

Main duties

Government managers in economic analysis and program administration perform some or all of the following duties:

- Plan, organize, direct, and control the development of economic policy research projects and economic programs
- Participate in the development of departmental policies by providing advice to senior government managers
- Organize departmental unit and establish procedures to meet departmental objectives set by senior management
- Direct and advise economists and other professional staff who conduct economic research, prepare reports or administer programs in areas of government activity such as taxation, international trade, labour, transportation or agriculture
- Direct and advise economic development officers or other staff administering programs to promote industrial and commercial business investment in urban or rural areas
- Plan, administer and control research and administration budgets for projects, support services, equipment or supplies
- Organize and direct committees evaluating departmental or agency projects or programs
- Interview, hire and oversee training and professional development.

Employment requirements

- A bachelor's degree in economics, business administration, commerce or public administration is required.
- A master's degree in economics or a related field may be required.
- Several years of experience as an economist, economic development officer or socio-economic researcher are required.

Additional information

- Progression to senior management positions is possible with experience.

Classified elsewhere

- *Economic Development Officers and Marketing Researchers and Consultants* (4163)
- *Economists and Economic Policy Researchers and Analysts* (4162)
- *Financial Managers* (0111)
- *Government Managers in Health and Social Policy Development and Program Administration* (0411)
- *Senior Government Managers and Officials* (0012)
- Labour policy analysts (in 4164 *Social Policy Researchers, Consultants and Program Officers*)

0413 Government Managers in Education Policy Development and Program Administration

Government managers in this unit group plan, organize, direct and control the development and administration of elementary, secondary and post-secondary education policies and programs. They are employed by government departments and agencies.

Examples of titles classified in this unit group

Director, Curriculum Development
Director, Education Policy Analysis and Research
Director, School Inspection
Education Director
Manager, Corporate Policy, Ministry of Education

Main duties

Government managers in this unit group perform some or all of the following duties:

- Participate in the development of education policy by providing advice to senior government managers
- Organize departmental unit and establish procedures to meet departmental objectives set by senior management
- Direct and advise policy researchers or program officers conducting research, preparing documents or administering programs for elementary and secondary school systems
- Plan, administer and control budgets for projects, programs, support services and equipment
- Organize and direct committees and working groups to plan, manage or evaluate education projects and programs
- Interview, hire and provide training for staff.

Employment requirements

- A bachelor's degree in education is required.
- A master's degree in a particular educational specialization may be required.
- Several years of combined experience as a school teacher and as a government education policy researcher, consultant or program officer are usually required.
- A provincial teaching certificate is required.

Additional information

- Progression to senior management positions in education is possible with experience.

Classified elsewhere

- *Administrators in Post-Secondary Education and Vocational Training* (0312)
- *Government Managers in Health and Social Policy Development and Program Administration* (0411)
- *School Principals and Administrators of Elementary and Secondary Education* (0313)
- *Senior Government Managers and Officials* (0012)

0414 Other Managers in Public Administration

Managers in this unit group plan, organize, direct and control the development of policies and programs which govern the daily operations of legislatures and other activities unique to government such as intergovernmental affairs and elections. They are employed by government departments, agencies and legislative bodies.

Examples of titles classified in this unit group

Administrator, House of Commons
Clerk of the Committee, Legislative Assembly Committee
Director, Election Planning
Director, Federal-Provincial Relations
Director, Intergovernmental Affairs

Main duties

Managers in this unit group perform some or all of the following duties:

- Participate in the development of policies and programs by providing advice to senior government managers of legislatures or departments or agencies involved in activities unique to government
- Organize government unit or agency and establish procedures to meet objectives set by senior management
- Direct and advise professional and non-professional staff conducting research, preparing documents or providing administrative support
- Plan, administer and control research and administration budgets for projects, programs, equipment and supplies
- Organize and direct committees and working groups to plan, manage or evaluate projects and programs
- Interview, hire and provide training for staff.

Employment requirements

- A bachelor's degree in a social science discipline, law or business administration is required.
- Several years of experience in government policy development, research or program administration, or in a professional occupation in social science, law or business administration are usually required.

Additional information

- Progression to senior management positions in this field is possible with experience.

Classified elsewhere

- *Administrative Services Managers* (011)
- *Government Managers in Economic Analysis, Policy Development and Program Administration* (0412)
- *Government Managers in Education Policy Development and Program Administration* (0413)
- *Government Managers in Health and Social Policy Development and Program Administration* (0411)
- *Senior Government Managers and Officials* (0012)

0511 Library, Archive, Museum and Art Gallery Managers

This unit group includes managers who plan, organize, direct and control the activities of libraries, archives, museums, art galleries or departments within such institutions. They are employed in libraries, archives, museums and non-retail art galleries.

Examples of titles classified in this unit group

Archive Director
Art Gallery Manager
Assistant Director of Archives
Chief Librarian
Curator Director
Executive Director, Museum
Historic Sites Administrator
Library Director
Museum Administrator

Main duties

Library, Archive, Museum and Art Gallery Managers perform some or all of the following duties:

- Plan, organize, direct and control the activities of a library or library system, archive or archive system, museum or art gallery or a technical department within such an institution
- Develop and administer policies and programs
- Develop, promote and implement public relations and promotional programs
- Prepare funding and grant applications and proposals
- Prepare and administer budget
- Recruit and provide training for professional, technical and clerical staff
- May perform the duties of a librarian, archivist or curator in smaller institutions.

Library, archive, museum and art gallery managers may specialize in a specific type of collection.

Employment requirements

- Library managers require a graduate degree in library and information science
  and
  Several years of experience as a librarian, including supervisory experience.
- Archive managers require a graduate degree in archival science or history
  and
  Several years of experience as an archivist or in historical research, including supervisory experience.
- Museum and art gallery managers usually require a graduate degree related to the collection or a training program in arts administration
  and
  Several years of experience as a curator, conservator or artist or experience in other related museum and art gallery work.

Additional information

- There is mobility between library and archive managers and between museum and art gallery managers.

Classified elsewhere

- *Archivists* (5113)
- *Conservators and Curators* (5112)
- *Librarians* (5111)

0512 Managers in Publishing, Motion Pictures, Broadcasting and Performing Arts

Managers in this unit group plan, organize, direct and control operations within publishing firms, film, theatre and record production companies and broadcasting facilities. They are employed by radio and television stations, by newspaper, periodical and book publishing firms, and by film, theatre, record and video production companies.

Examples of titles classified in this unit group

Ballet Company Director
Book Publishing Manager
Broadcasting Manager
Copyright Manager, Publishing
Dance Company Director
Editor-in-Chief
Managing Editor
Manager, Radio Station
Opera Company Director
Publications Manager
Radio Programming Manager
Station Manager, Broadcasting
Television Station Manager
Theatre Company Manager
Video Production Company Manager

Main duties

Managers in this unit group perform some or all of the following duties:

- Establish procedures and implement policies in newspaper and publishing firms, in film, theatre, record and video production companies, and in radio and television stations
- Plan and maintain production schedules for publications, films, broadcasts, and theatre, record and video productions
- Prepare and control budgets
- Hire and supervise staff
- Consult with government regulatory agencies and review programs and policies to ensure conformance to regulations
- Initiate or approve development of articles, books, films, broadcasts, musical recordings and theatre productions, and liaise with authors, composers, producers and directors.

Employment requirements

- A university degree or college diploma in communications, broadcasting, journalism or other arts discipline is usually required.
- Several years of experience within the publishing, film production, broadcasting or theatre industry are usually required.

Classified elsewhere

- *Producers, Directors, Choreographers and Related Occupations* (5131)
- *Senior Managers – Trade, Broadcasting and Other Services, n.e.c.* (0015)
- Publishers (in 0016 *Senior Managers – Goods Production, Utilities, Transportation and Construction*)

0513 Recreation and Sport Program and Service Directors

This unit group includes managers who plan, organize, direct and control the operations of comprehensive recreational and sport programs and services, national or provincial sport governing agencies and professional athletic teams. They are employed by municipalities, community and private recreational organizations, sports governing agencies and professional athletic team organizations.

Examples of titles classified in this unit group

Director of Recreation
Director of Sport Administration
Executive Director, YMCA
Professional Athletic Team Manager
Professional Football Team Manager
Professional Hockey Team Manager
Recreation Director
Sports Program Director
Sports Association Director

Main duties

Managers and directors in this unit group perform some or all of the following duties:

- Develop and manage recreation and sport programs and services
- Provide technical and professional advice on recreation and sports matters
- Prepare budget estimates and develop policies and procedures to implement programs
- Manage the operations of a sport governing agency
- Organize and administer national and provincial training, coaching, officiating and other programs associated with a particular sport
- Manage the operations of a professional athletic team
- Recruit professional coaches and athletes
- Direct fundraising drives and arrange for sponsorships from public and private organizations
- Develop long range plans and negotiate business contracts.

Employment requirements

- A university degree in recreology, physical education, sports administration or a related field
  or
  A college diploma in recreation management or sports administration is usually required.
- Several years of experience in an occupation related to recreation and sport administration, consulting or programming are usually required.
- Some directors of recreation may be required to have Municipal Recreation Director's Certificate.
- Executive directors of sport governing agencies may be required to have coaching certification in a particular sport.

Classified elsewhere

- *Recreation and Sports Program Supervisors and Consultants* (4167)
- *Coaches* (5252)
- *Sports Officials and Referees* (5253)

0611 Sales, Marketing and Advertising Managers

Sales, Marketing and Advertising Managers plan, organize, direct and control the activities of establishments and departments involved in commercial, industrial and wholesale sales, marketing, advertising and public relations. They are employed by commercial, industrial and wholesale establishments, marketing and public relations consulting companies and by government departments.

Examples of titles classified in this unit group

Advertising Director
Corporate Sales Manager
Director, Communications
Director, Public Relations
Fund Raising Campaign Manager
Manager, Media Relations
Marketing Manager
Promotions Manager
Regional Sales Manager
Sales and Marketing Manager
Sales Director (Except Retail)

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Sales managers plan and direct the activities of sales departments in commercial, industrial, wholesale and other non-retail establishments.
- Marketing managers establish distribution networks for products and services, initiate market research studies and analyze their findings, assist in product development, and direct the marketing strategies of establishments.
- Advertising managers plan and direct the activities of firms and departments that develop and implement advertising campaigns to promote the sales of products and services.
- Public relations managers direct establishments and departments that develop and implement communication strategies and information programs, publicize activities and events, and maintain media relations on behalf of businesses, governments and other organizations.

Employment requirements

- Sales and marketing managers require a university degree or college diploma in business administration or in a related field with a specialization in sales or marketing
  and
  Several years of experience as a sales or marketing representative or in a related occupation.
- Advertising and public relations managers require a university degree or college diploma in public relations, communications, marketing, journalism or in a related field
  and
  Several years of experience as an advertising officer, public relations officer, communications officer or in a related occupation.

Additional information

- Progression to senior management positions is possible with experience.

Classified elsewhere

- *Professional Occupations in Public Relations and Communications* (5124)
- *Retail Trade Managers* (0621)
- *Retail Trade Supervisors* (6211)
- *Senior Managers – Trade, Broadcasting and Other Services, n.e.c.* (0015)

0621 Retail Trade Managers

Retail Trade Managers plan, organize, direct and control the operations of establishments that sell merchandise or services on a retail basis. Retail Trade Managers are employed by retail sales establishments or they may own and operate their own store.

Examples of titles classified in this unit group

Antique Dealer
Assistant Manager – Retail
Bookstore Manager
Boat Dealer
Car Dealership Manager
Clothing Store Manager
Department Store Manager
Service Station Manager
Sporting Goods Store Manager
Store Manager – Retail
Supermarket Manager
Travel Agency Manager
Variety Store Manager

Main duties

Retail Trade Managers perform some or all of the following duties:

- Plan and direct the operations of establishments engaged in retail sales or of departments in such establishments
- Manage staff and assign duties
- Study market research and trends to determine consumer demand, potential sales volumes and effect of competitors' operations on sales
- Determine merchandise and services to be sold, and implement price and credit policies
- Locate, select and procure merchandise for resale
- Develop and implement marketing strategies
- Plan budgets and authorize expenditures
- Determine staffing requirements and hire or oversee hiring of staff.

Employment requirements

- Completion of secondary school is required.
- A university degree or college diploma in business administration or other field related to the product or service being sold may be required.
- Several years of related retail sales experience at increasing levels of responsibility are usually required.

Additional information

- There is some mobility between managers in this unit group, depending on the product or service.

Classified elsewhere

- *Insurance, Real Estate and Financial Brokerage Managers* (0121)
- *Restaurant and Food Service Managers* (0631)
- *Retail Trade Supervisors* (6211)
- *Sales, Marketing and Advertising Managers* (0611)

0631 Restaurant and Food Service Managers

Restaurant and Food Service Managers plan, organize, direct and control the operations of restaurants, bars, cafeterias and other food and beverage services. They are employed in food and beverage service establishments or they may be self-employed.

Examples of titles classified in this unit group

Assistant Manager, Restaurant
Banquet Manager
Bar Manager
Cafeteria Manager
Catering Service Manager
Dining Room Manager
Food Services Manager
Hotel Food and Beverage Service Manager
Restaurant Manager
Restaurateur

Main duties

Restaurant and Food Service Managers perform some or all of the following duties:

- Plan, organize, direct and control the operations of a restaurant, bar, cafeteria or other food or beverage service
- Determine type of services to be offered and implement operational procedures
- Recruit staff and oversee staff training
- Set staff work schedules and monitor staff performance
- Control inventory, monitor revenues and modify procedures and prices
- Resolve customer complaints and ensure health and safety regulations are followed
- Negotiate arrangements with suppliers for food and other supplies
- Negotiate arrangements with clients for catering or use of facilities for banquets or receptions.

Employment requirements

- Completion of a college or other program related to hospitality or food and beverage management is usually required.
- Several years of experience in the food service sector, including supervisory experience, are required.

Additional information

- Progression to senior management in food service is possible with experience.

Classified elsewhere

- *Dietitians and Nutritionists* (3132)
- *Food Service Supervisors* (6212)
- Executive chefs (in 6241 *Chefs*)
- Senior managers in food service (in 0015 *Senior Managers – Trade, Broadcasting and Other Services, n.e.c.*)

0632 Accommodation Service Managers

Accommodation Service Managers plan, organize, direct and control the operations of an accommodation establishment or of a department within such an establishment. They are employed by hotels, motels, resorts, student residences and other accommodation establishments or they may be self-employed.

Examples of titles classified in this unit group

Assistant Manager, Hotel
Bed and Breakfast Operator
Front Desk Manager
Guest House Operator
Hotel Director
Hotel Manager
Motel Manager
Reservations Manager
Seasonal Resort Manager
Ski Resort Manager
Tourist Home Operator

Main duties

Accommodation Service Managers perform some or all of the following duties:

- Develop and implement policies and procedures for the operation of the department or establishment
- Prepare budgets and monitor revenues and expenses
- Participate in the development of pricing and promotional strategies
- Negotiate with suppliers for the provision of materials and supplies
- Negotiate with clients for the use of facilities for conventions, banquets, receptions and other functions
- Recruit and supervise staff, oversee training and set work schedules
- Resolve customer complaints.

Employment requirements

- A university degree or college diploma in hotel management or other related discipline is usually required for managers employed by hotel chains or large accommodation establishments.
- Several years of experience within the accommodation industry are usually required and may substitute for formal educational requirements.

Classified elsewhere

- *Executive Housekeepers* (6213)
- *Facility Operation Managers* (0721)
- *Restaurant and Food Service Managers* (0631)
- *Retail Trade Managers* (0621)
- *Sales, Marketing and Advertising Managers* (0611)

0641 Commissioned Police Officers

Commissioned Police Officers plan, organize, direct and control police force administration and police activities such as maintaining law and order and detecting and preventing crime. They are employed by municipal, provincial and federal governments. This unit group includes officers from the rank of Staff Sergeant to Police Commissioner. Commissioned officers in the Ports Canada Police and in the Railway Police are also included in this unit group.

Examples of titles classified in this unit group

Chief Superintendent
Deputy Police Chief
Harbour Police Chief
Police Chief
Police Lieutenant
Police Superintendent
Railway Police Chief
RCMP Commissioner
Staff Inspector

Main duties

Commissioned Police Officers perform some or all of the following duties:

- Plan, organize, direct and control the activities of a police force or division of a police force
- Develop and implement police force policies and procedures
- Oversee police investigations and ensure that procedures are conducted in accordance with laws and regulations
- Assess performance of subordinates and authorize promotions, transfers and disciplinary actions.

Employment requirements

- Completion of secondary school is required.
- A university degree in the social sciences or in business administration may be required.
- Several years of experience as a police officer are required.

Classified elsewhere

- *By-law Enforcement and Other Regulatory Officers, n.e.c.* (6463)
- *Police Officers (Except Commissioned)* (6261)
- *Sheriffs and Bailiffs* (6461)

0642 Fire Chiefs and Senior Firefighting Officers

Fire Chiefs and Senior Firefighting Officers plan, organize, direct and control firefighting operations and fire prevention activities in fire departments. Fire Chiefs and Senior Firefighting Officers are employed by municipal and federal governments and by industrial establishments with firefighting services.

Examples of titles classified in this unit group

Deputy Fire Chief
District Fire Chief
Fire Chief

Main duties

Fire Chiefs and Senior Firefighting Officers perform some or all of the following duties:

- Develop and implement policies and procedures for the operation of a municipal fire department, a district fire region, or an industrial firefighting service
- Plan, direct and co-ordinate firefighting strategies for fire departments
- Direct the training of personnel in firefighting methods
- Develop and oversee the implementation of fire prevention campaigns
- Represent the fire department in communications with government, the media and the public.

Employment requirements

- Completion of secondary school is required.
- Completion of a provincial or municipal firefighters training course is required.
- A minimum of ten years of experience as a firefighter is usually required before becoming eligible for a senior officer position.

Classified elsewhere

- *Firefighters* (6262)

0643 Commissioned Officers, Armed Forces

This unit group consists of commissioned officers in the armed forces who plan, organize and command the activities of armed forces personnel in occupations unique to the armed forces such as artillery and infantry units, military intelligence units and air weapons control units. The ranks of commissioned officers included in this unit group range from lieutenant to general.

Examples of titles classified in this unit group

Air Weapons Control Officer
Armour Officer
Artillery Officer
Infantry Officer
Intelligence Officer (Management)

Main duties

Commissioned Officers, Armed Forces perform some or all of the following duties:

- Plan, organize and command the activities of military combat units such as armour, artillery and infantry battalions
- Develop and implement military procedures and policies based on detailed knowledge of units' capabilities and performance
- Direct subordinates in training and co-ordinate and direct activities of units in accordance with military practices
- Assume responsibility for welfare, morale and discipline of units
- Review unit performance, prepare reports and provide briefings for superiors
- May command and lead units as part of United Nations' peacekeeping role in foreign countries.

Employment requirements

- A university degree is usually required.
- Completion of military training is required.
- Experience as a non-commissioned member of the armed forces and demonstrated leadership ability may substitute for a university degree.
- Senior ranks, such as colonel, require several years of experience.

Additional information

- Data provided by Statistics Canada for *Commissioned Officers Armed Forces* (0643) includes *all* commissioned officers. For further information, see introduction.

Classified elsewhere

- *Occupations Unique to the Armed Forces* (6464)

Commissioned officers whose occupations have civilian counterparts are classified with those occupations. For example:

- Dental officer – military (in 3113 *Dentists*)
- Legal officer – military (in 4112 *Lawyers and Quebec Notaries*)
- Military engineering officer, civil (in 2131 *Civil Engineers*)
- Pilot – military (in 2271 *Air Pilots, Flight Engineers and Flying Instructors*)

0651 Other Services Managers

This unit group includes managers of establishments that provide services not elsewhere classified, such as dry cleaning, hairdressing or residential cleaning. This group also includes managers of schools that provide non-vocational instruction in driving, languages, music, dance, art, cooking or fashion.

Examples of titles classified in this unit group

Barber Shop Manager
Car Wash Manager
Cooking School Manager
Driving School Manager
Dry Cleaning Service Manager
Hairdressing Salon Manager
Manager, Residential Cleaning Service
Manager, Septic Tank Service
Manager, Window Washing Service
Pest Control Service Manager

Main duties

Managers in this unit group perform some or all of the following duties:

- Plan, organize, direct and control an establishment providing services such as dry cleaning, hairdressing or residential cleaning, or a school providing non-vocational instruction in driving, languages, music, dance, art, cooking or fashion
- Establish or implement policies and procedures for staff
- Plan and control budget and inventory
- Respond to inquiries or complaints and resolve problems
- Manage contracts for advertising or marketing strategies
- Hire, train and supervise staff.

Employment requirements

- Completion of secondary school is usually required.
- A college diploma or vocational certificate in the subject of instruction may be required.
- One to three years of experience in the service being offered are usually required.

Classified elsewhere

- *Accommodation Service Managers* (0632)
- *Cleaning Supervisors* (6215)
- *Executive Housekeepers* (6213)
- *Other Business Services Managers* (0123)
- *Retail Trade Managers* (0621)
- *Retail Trade Supervisors* (6211)

0711 Construction Managers

Construction Managers plan, organize, direct and control the activities of a construction company or a construction department within a company, under the direction of a general manager or other senior manager. They are employed by residential, commercial and industrial construction companies and by construction departments of companies outside the construction industry.

Examples of titles classified in this unit group

Construction Manager
Construction Superintendent
Commercial Construction Manager
General Contractor
Housing Construction Manager
Pipeline Construction Manager
Industrial Construction Manager
Project Manager, Construction
Residential Construction Manager

Main duties

Construction Managers perform some or all of the following duties:

- Manage construction projects from start to finish according to schedule, specifications and budget
- Prepare and submit construction project budget estimates
- Plan and prepare construction schedules and milestones and monitor progress against established schedules
- Prepare contracts and negotiate revisions, changes and additions to contractual agreements with architects, consultants, clients, suppliers and subcontractors
- Develop and implement quality control programs
- Represent company on matters such as business services and union contracts negotiation
- Prepare progress reports and issue progress schedules to clients
- Direct the purchase of building materials and land acquisitions
- Hire and supervise the activities of subcontractors and subordinate staff.

Employment requirements

- A university degree in civil engineering or a college diploma in construction technology is usually required.
- Several years of experience in the construction industry, including experience as a construction supervisor or field superintendent, are usually required.
- Extensive experience in the construction industry may substitute for post-secondary education requirements.
- Professional engineering status or construction trade certification may be required by some employers.

Additional information

- Progression to senior management positions is possible with experience.

Classified elsewhere

- *Residential Home Builders and Renovators* (0712)
- *Senior Managers – Goods Production, Utilities, Transportation and Construction* (0016)

0712 Residential Home Builders and Renovators

Residential home builders own, operate and manage companies engaged in the construction of new residential homes. Residential home renovators own, operate and manage companies engaged in the renovation of existing residential homes.

Examples of titles classified in this unit group

Contractor, Residential Homes
Contractor, Home Renovation
Home Builder
Home Renovator
Renovation Contractor
Residential Home Builder

Main duties

Residential Home Builders and Renovators perform some or all of the following duties:

- Plan, organize, direct and control activities of a residential home building or renovating company
- Prepare bids for home construction or renovation projects
- Consult with customers, architects and engineers regarding plans and specifications
- Select and employ trade subcontractors to do specialized work, such as plumbing, heating and electrical work
- Plan and prepare work schedules and co-ordinate the activities of subcontractors
- Inspect work performed by subcontractors to ensure quality and conformity with plans and specifications
- Prepare and maintain a directory of suppliers and trade subcontractors
- Develop and implement marketing and advertising strategies to promote company's products and services
- May perform carpentry or other trade work during home construction or renovation activities.

Employment requirements

- Extensive experience in the home construction industry, including experience as a general supervisor, is usually required for self-employment as a home builder or a home renovator.

Classified elsewhere

- *Construction Managers* (0711)
- Carpentry, electrical and other construction trade contractors (in 721 *Contractors and Supervisors, Trades and Related Workers*)

0713 Transportation Managers

Transportation Managers, Operations plan, organize, direct and control the operations of transportation companies such as railways, airlines, bus lines, municipal transit systems, shipping lines and trucking companies, under the direction of a general manager or other senior manager. Transportation Managers, Freight Traffic plan, organize, direct and control companies or departments responsible for the transportation and movement of goods, under the direction of a general manager or other senior manager. They are employed by transportation, freight forwarding and shipping companies and by transportation departments of companies in retail and manufacturing sectors and utilities.

Examples of titles classified in this unit group

Bus Company Manager
Flight Operations Manager
Freight Forwarding Manager
Marine Superintendent
Railway Freight Manager
Superintendent, Rail Operations
Transport Department Manager
Transportation Manager
Traffic Manager
Urban Transit System Manager

Main duties

Transportation Managers, Operations perform some or all of the following duties:

- Plan, organize, direct and control the operations of a transportation company
- Set operations policies and standards, including determination of safety procedures for the handling of dangerous goods, and ensure compliance with transport regulations
- Oversee dispatch of vehicles, vessels or aircraft
- Control the company or departmental budget, including acquisitions
- Monitor company's or department's performance, prepare reports for senior management, and plan for changes to schedules and policies
- Recruit personnel and oversee their training.

Transportation Managers, Freight Traffic perform some or all of the following duties:

- Plan, organize, direct and control companies or departments responsible for co-ordinating, arranging and monitoring the transportation and movement of goods
- Arrange for shipping documentation and oversee the scheduling and dispatching of goods and the tracking and tracing of goods in transit
- Set performance goals, oversee the setting of transportation service rates and monitor revenue
- Develop plans and procedures for the transportation and storage of goods
- Negotiate with carriers, warehouse operators and insurance company representatives for services and preferential rates
- Control the departmental budget
- Recruit personnel and oversee their training.

Employment requirements

Transportation Managers, Operations

- A bachelor's degree in business administration or engineering is usually required.
- Several years of experience in transportation operations are usually required, including supervisory experience.
- Extensive experience as a supervisor and operator in a particular transport mode, such as a pilot, train engineer, vessel master or truck driver, may substitute for formal education.
- Certification as an operator of a particular mode of transportation, such as commercial pilot, vessel master or truck driver, is usually required.

Transportation Managers, Freight Traffic

- Completion of secondary school is required.
- A college diploma or university degree in business or transportation administration may be required.
- Several years of clerical, operational or administrative experience related to freight traffic are required.

0713 Transportation Managers

Additional information

- There is little or no mobility between transportation managers, operations and transportation managers, freight traffic.
- There is little or no mobility between transportation managers of land, sea and air transportation operations.

Classified elsewhere

- Airport managers, harbour masters and other managers of transportation facilities (in 0721 *Facility Operation Managers*)
- Senior transportation managers (in 0016 *Senior Managers – Goods Production, Utilities, Transportation and Construction*)

0721 Facility Operation Managers

Facility Operation Managers plan, organize, direct and control the operations of commercial, transportation and recreational facilities. Facility Operation Managers are employed by a wide range of establishments, such as airports, harbours, canals, shopping centres, convention centres, warehouses and recreation facilities.

Examples of titles classified in this unit group

Airport Manager
Arena Manager
Canal Superintendent
Convention Centre Manager
Facility Operation Manager
Harbour Master
Marina Manager
Recreational Facility Manager
Shopping Mall Manager
Warehouse Manager

Main duties

Facility Operation Managers perform some or all of the following duties:

- Plan, organize, direct and control the operations of commercial, transportation and recreational facilities
- Oversee the leasing of facility space and the development of marketing strategies
- Plan, organize and direct administrative services such as signage, cleaning, maintenance, parking, safety inspections, security and snow removal
- Oversee the maintenance and repair of machinery, equipment and electrical and mechanical systems
- Plan and manage the facility's operation and maintenance budget
- Prepare or oversee the preparation of reports and statistics related to areas of responsibility
- Recruit personnel and oversee their training.

Employment requirements

- Completion of a college or university program in business administration or in a discipline related to facility operation and maintenance
  or
  An equivalent combination of technical training and experience in administration or maintenance is required.
- Five to ten years of supervisory experience in facility operations are usually required.

Additional information

- In data provided by Statistics Canada, unit groups 0721 and 0722 are combined to form 0720 *Facility Operation and Maintenance Managers*.

Classified elsewhere

- *Administrative Services Managers* (011)
- *Maintenance Managers* (0722)
- Building superintendents (in 6663 *Janitors, Caretakers and Building Superintendents*)
- Production operations managers (in 0911 *Manufacturing Managers*)

0722 Maintenance Managers

Maintenance Managers plan, organize, direct and control the maintenance department within commercial, industrial, institutional, recreational and other facilities. Maintenance Managers are employed by a wide range of establishments, such as office buildings, shopping centres, airports, harbour operations, warehouses, grain terminals, universities, schools and sports facilities, and by the maintenance and mechanical engineering departments of manufacturing and other industrial establishments.

Examples of titles classified in this unit group

Campus Maintenance Manager
Chief, Maintenance Support Services
Head, Facilities Maintenance
Maintenance Manager
Mechanical Superintendent
Plant Maintenance Superintendent
Superintendent, Maintenance and Service

Main duties

Maintenance Managers perform some or all of the following duties:

- Direct the maintenance and repair of an establishment's machinery, equipment and electrical and mechanical systems
- Develop and implement schedules and procedures for safety inspections and preventative maintenance programs
- Co-ordinate cleaning, snow removal and landscaping operations
- Administer contracts for the provision of supplies and services
- Plan and manage a facility's maintenance budget
- Recruit personnel and oversee their training.

Employment requirements

- Completion of a college or university program in electrical or mechanical engineering or in another discipline related to building maintenance
  or
  An equivalent combination of technical training and experience in building maintenance is required.
- Several years of supervisory experience in facility maintenance are usually required.

Additional information

- In data provided by Statistics Canada, unit groups 0721 and 0722 are combined to form 0720 *Facility Operation and Maintenance Managers*.

Classified elsewhere

- *Facility Operation Managers* (0721)
- Building superintendents (in 6663 *Janitors, Caretakers and Building Superintendents*)

0811 Primary Production Managers (Except Agriculture)

This unit group includes managers who plan, organize, direct and control the operations of establishments in the following primary industries: forestry and logging, mining and quarrying, oil and gas drilling, production and servicing operations, and commercial fishing.

Examples of titles classified in this unit group

Director of Mining
Forest Operations Manager
Manager, Drilling Operations
Manager, Fishing Operations
Manager, Forestry Operations
Manager, Gas Field Operations
Manager, Oil Well Servicing
Manager, Quarrying
Mine Manager
Operations Manager, Forestry
Shore Captain, Fishing

Main duties

Primary Production Managers in this unit group perform some or all of the following duties:

- Oversee and analyze operations in forestry, logging, mining, quarrying, or oil and gas operations or in services to logging, mining and oil and gas industries, or in commercial fishing
- Recommend operational changes to senior management when necessary to ensure that production quotas and procedures are met
- Prepare production reports for review by senior management
- Confer with other managers to set production quotas, to plan extraction sites and to develop policies for the removal of raw materials
- Evaluate efficiency of production sites to determine adequacy of personnel, equipment and technologies used, and make changes to work schedule or equipment when necessary
- Ensure adherence to safety regulations
- Hire personnel and oversee training needs of staff
- May direct peripheral activities such as the construction of access roads or temporary living quarters.

Employment requirements

- Forestry managers usually require a bachelor's degree in forestry science or forest engineering.
- Mining and quarrying managers usually require a bachelor's degree in mining engineering or earth sciences.
- Oil and gas managers usually require a bachelor's degree in geology, earth sciences, or petroleum engineering.
- Several years of experience in a supervisory occupation in the particular industry are usually required and may substitute for formal education requirements.

Additional information

- Progression to senior management positions in the respective industries is possible with experience.

Classified elsewhere

- *Farmers and Farm Managers* (8251)
- *Fishing Masters and Officers* (8261)
- *Senior Managers – Goods Production, Utilities, Transportation and Construction* (0016)
- *Supervisors, Logging and Forestry* (8211)
- *Supervisors, Mining and Quarrying* (8221)
- *Supervisors, Oil and Gas Drilling and Service* (8222)
- Directors of research in primary industry (in 0212 *Architecture and Science Managers*)

0911 Manufacturing Managers

Manufacturing Managers plan, organize, direct and control the operations of a manufacturing establishment or of a production department within a manufacturing establishment, under the direction of a general manager or other senior manager. They are employed by manufacturing companies.

Examples of titles classified in this unit group

Automobile Production Manager
Clothing Factory Manager
Dairy Plant Manager
Distillery Manager
Factory Superintendent
Foundry Manager
Manufacturing Manager
Operations Manager, Manufacturing
Paper Mill Manager
Plant Manager, Manufacturing
Printing Plant Manager
Production Manager, Manufacturing
Textile Mill Manager
Tire Plant Manager

Main duties

Manufacturing Managers perform some or all of the following duties:

- Plan, organize, direct and control the operations of a manufacturing establishment or the operations or production department of a manufacturing establishment
- Develop and implement plans to efficiently use materials, labour and equipment to meet production targets
- Plan and manage the establishment or departmental budget
- Develop production schedules and maintain an inventory of raw materials and finished products
- Plan and implement changes to machinery and equipment, production systems and methods of work
- Direct quality control inspection system and develop production reporting procedures
- Develop equipment maintenance schedules and recommend the replacement of machines
- Train or oversee training of employees in the use of new equipment or production techniques.

Employment requirements

- Completion of a college or university program in engineering or business administration is usually required.
- Five to ten years of supervisory experience in manufacturing are required.

Additional information

- Progression to senior management positions is possible with experience.

Classified elsewhere

- *Facility Operation Managers* (0721)
- *Maintenance Managers* (0722)
- *Senior Managers – Goods Production, Utilities, Transportation and Construction* (0016)
- *Transportation Managers* (0713)
- *Utilities Managers* (0912)

0912 Utilities Managers

This unit group includes managers who plan, organize, direct and control the operations of utility companies or services or of heating oil distribution companies. The services provided include the distribution of water, electricity, natural gas and heating oil to residential, commercial and industrial consumers, waste disposal and waste recycling. Utilities Managers are employed in public and private sector utilities and in heating oil distribution companies.

Examples of titles classified in this unit group

Director, Distribution Systems (Utilities)
Director, Electrical Power Transmission Operations
Director of Waste Management
Director of Water Pollution Control
Director, Water Supply
Electric Power Plant Manager
Liquid Waste Facility Manager
Manager, Distribution, Refined Petroleum Products
Manager, Electric Generating Plant
Manager, Gas Supply Operations
Manager, Sewage Treatment Plant
Water Filtration Plant Manager

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Water supply managers manage water filtration, purification processes and pumping operations, schedule and oversee the maintenance of plant equipment and prepare reports on water supply and water quality.
- Electrical power distribution managers manage the operations of electrical power distribution systems including generating stations, transmission stations and distribution networks. They may also plan and direct the distribution activities of a municipal electrical power establishment.
- Natural gas supply managers manage the delivery of gas to consumers, monitor supply inventories and control the recording of injections and withdrawals.
- Petroleum product distribution managers plan and direct the distribution of heating oil products to retail distributors and regional storage sites.
- Water pollution control managers manage the operations of a sewage treatment plant, schedule and direct maintenance of plant equipment, and prepare reports on water quality.
- Waste systems managers manage solid or liquid waste collection and disposal systems, train drivers in how to handle waste and ensure safe operation of disposal facilities.

Employment requirements

- A bachelor's degree or college diploma in an appropriate discipline is required. For example, electrical engineering is required for managers of transmission lines, and water resource technology for water supply managers.
- Several years of experience as a supervisor in a related utilities operations department are required.
- Professional engineer certification is usually required for managers of utility operations involved in the transmission and distribution of electrical power, and natural gas and heating oil.

Additional information

- Progression to senior management positions in the utility industry is possible with experience.

Classified elsewhere

- *Maintenance Managers* (0722)
- *Senior Managers – Goods Production, Utilities, Transportation and Construction* (0016)

Major Group 11
PROFESSIONAL OCCUPATIONS IN BUSINESS AND FINANCE

111 Auditors, Accountants and Investment Professionals

1111 Financial Auditors and Accountants
1112 Financial and Investment Analysts
1113 Securities Agents, Investment Dealers and Traders
1114 Other Financial Officers

112 Human Resources and Business Service Professionals

1121 Specialists in Human Resources
1122 Professional Occupations in Business Services to Management

Major Group 12
SKILLED ADMINISTRATIVE AND BUSINESS OCCUPATIONS

121 Clerical Supervisors

1211 Supervisors, General Office and Administrative Support Clerks
1212 Supervisors, Finance and Insurance Clerks
1213 Supervisors, Library, Correspondence and Related Information Clerks
1214 Supervisors, Mail and Message Distribution Occupations
1215 Supervisors, Recording, Distributing and Scheduling Occupations

122 Administrative and Regulatory Occupations

1221 Administrative Officers
1222 Executive Assistants
1223 Personnel and Recruitment Officers
1224 Property Administrators
1225 Purchasing Agents and Officers
1226 Conference and Event Planners
1227 Court Officers and Justices of the Peace
1228 Immigration, Unemployment Insurance and Revenue Officers

123 Finance and Insurance Administrative Occupations

1231 Bookkeepers
1232 Loan Officers
1233 Insurance Adjusters and Claims Examiners
1234 Insurance Underwriters
1235 Assessors, Valuators and Appraisers
1236 Customs, Ship and Other Brokers

124 Secretaries, Recorders and Transcriptionists

1241 Secretaries (Except Legal and Medical)
1242 Legal Secretaries
1243 Medical Secretaries
1244 Court Recorders and Medical Transcriptionists

Major Group 14
CLERICAL OCCUPATIONS

141 Clerical Occupations, General Office Skills

1411 General Office Clerks
1412 Typists and Word Processing Operators
1413 Records and File Clerks
1414 Receptionists and Switchboard Operators

142 Office Equipment Operators

1421 Computer Operators
1422 Data Entry Clerks
1423 Typesetters and Related Occupations
1424 Telephone Operators

143 Finance and Insurance Clerks

1431 Accounting and Related Clerks
1432 Payroll Clerks
1433 Tellers, Financial Services
1434 Banking, Insurance and Other Financial Clerks
1435 Collectors

144 Administrative Support Clerks

1441 Administrative Clerks
1442 Personnel Clerks
1443 Court Clerks

145 Library, Correspondence and Related Information Clerks

1451 Library Clerks
1452 Correspondence, Publication and Related Clerks
1453 Customer Service, Information and Related Clerks
1454 Survey Interviewers and Statistical Clerks

146 Mail and Message Distribution Occupations

1461 Mail, Postal and Related Clerks
1462 Letter Carriers
1463 Couriers and Messengers

147 Recording, Scheduling and Distributing Occupations

1471 Shippers and Receivers
1472 Storekeepers and Parts Clerks
1473 Production Clerks
1474 Purchasing and Inventory Clerks
1475 Dispatchers and Radio Operators
1476 Transportation Route and Crew Schedulers

1112 Financial and Investment Analysts

Financial and Investment Analysts collect and analyze financial marketplace information such as economic forecasts, trading volumes, financial backgrounds of companies, historical performances and future trends of stocks, bonds and other investment instruments to provide financial and investment advice for their company or their company's clients. They are employed by a wide range of establishments throughout the private and public sector, such as banks, brokerage houses, insurance companies, investment companies, manufacturing firms, trust companies, utility companies and underwriting firms.

Examples of titles classified in this unit group

Chartered Financial Analyst
Financial Analyst
Financial Consultant
Investment Analyst
Money Market Analyst
Securities Analyst

Main duties

Financial and Investment Analysts perform some or all of the following duties:

- Collect financial and investment information about companies, stocks, bonds and other investments using daily stock and bond reports, economic forecasts, trading volumes, financial periodicals, securities manuals, company financial statements and other financial reports and publications
- Examine and analyze financial and investment information collected, including profiles of companies, stock and bond prices, yields and future trends and other investment information
- Provide investment advice and recommendations to clients, senior company officials, pension fund managers, securities agents and associates
- Prepare company, industry and economic outlooks, analytical reports, briefing notes and correspondence.

Employment requirements

- A bachelor's degree in commerce, business administration or economics
  and
  On-the-job training and industry courses and programs are usually required.
- The Chartered Financial Analyst (CFA) designation, available through a program conducted by the Institute of Chartered Financial Analysts in the United States, may be required by some employers.

Additional information

- Progression to management positions, such as securities manager, is possible with experience.

Classified elsewhere

- *Securities Agents, Investment Dealers and Traders* (1113)
- Financial planners (in 1114 *Other Financial Officers*)

1113 Securities Agents, Investment Dealers and Traders

Securities agents and investment dealers buy and sell stocks, bonds, treasury bills, mutual funds and other securities for individual investors, pension fund managers, banks, trust companies, insurance firms and other establishments. Traders buy and sell stocks, bonds, commodity futures, foreign currencies and other securities at stock exchanges on behalf of investment dealers. They are employed by investment companies, stock brokerage firms, stock and commodity exchanges and other establishments in the securities industry.

Examples of titles classified in this unit group

Bond Dealer
Commodities Trader
Floor Trader, Commodity Exchange
Investment Dealer
Mutual Fund Broker
Registered Representative, Investments
Securities Sales Agent
Stock Broker
Supervisor, Registered Representatives

Main duties

Securities sales agents and investment dealers perform some or all of the following duties:

- Buy and sell stocks, bonds, treasury bills, mutual funds and other securities for individual investors, pension fund managers or companies such as banks, trust companies and insurance firms
- Provide investment information and advice to clients
- Review financial periodicals, stock and bond reports, business publications and other material to identify potential investments for clients
- Monitor clients' investment portfolios and ensure that investment transactions are carried out according to industry regulations.

Traders perform some or all of the following duties:

- Buy and sell stocks, bonds, commodity futures, foreign currencies and other securities at stock exchanges on behalf of investment dealers
- Develop trading strategies by reviewing investment information and monitoring market conditions from exchange floor and through contact with trading departments of other investment firms, pension fund managers and financial analysts
- Make bids and offers to buy and sell securities and complete details of sales on exchange trade tickets.

Employment requirements

- A university degree or college diploma in economics, business or other discipline is usually required.
- Investment, sales or other related industry experience may substitute for post-secondary education.
- Securities sales representatives and traders require completion of industry investment and sales training programs and completion of the Canadian Securities Course and the Registered Representative Manual Exam offered by the Canadian Securities Institute.
- Specialized courses are also available for securities sales representatives and traders who want to trade in specific investment products such as securities options and futures contracts.
- Licensure by the provincial securities commission in the province of employment is required for securities agents, investment dealers and traders.

Additional information

- Progression to related management positions is possible with experience.

Classified elsewhere

- *Financial and Investment Analysts* (1112)
- *Other Financial Officers* (1114)
- Financial brokerage managers (in 0121 *Insurance, Real Estate and Financial Brokerage Managers*)

0016 Senior Managers – Goods Production, Utilities, Transportation and Construction

Senior managers in this unit group plan, organize, direct and control, through middle managers, goods production, utility, transportation and construction companies. They formulate policies which establish the direction to be taken by these companies, either alone or in conjunction with other members of a board of directors.

Examples of titles classified in this unit group

Chief Executive Officer (CEO) – Manufacturing Company
Chief Financial Officer (CFO) – Urban Transit System
Corporate Controller – Logging Company
Executive Vice-President – Railway
General Manager – Trucking Company
President – Residential Construction Company
Publisher
Regional Vice-President – Petroleum Production Company
Vice-President, Finance – Mining Company
Vice-President, Marketing – Airline
Vice-President, Operations – Electric Power Company
Vice-President, Sales – Pulp and Paper Manufacturer

Main duties

Senior managers in this unit group perform some or all of the following duties:

- Establish objectives for the company and formulate or approve policies and programs
- Authorize and organize the establishment of major departments and associated senior staff positions
- Allocate funds to implement company policies and programs; establish financial and administrative controls; formulate and approve promotion campaigns; and approve overall personnel planning
- Select or approve the selection of middle managers, directors or other executive staff
- Co-ordinate the work of regions, divisions or departments
- Represent the company or delegate representatives to act on behalf of the company in negotiations or other official functions.

Senior managers in this unit group may specialize in areas such as finance, marketing or human resources or in a particular product area.

Employment requirements

- A university degree or college diploma in engineering, business administration, commerce or other discipline related to the company's product is usually required.
- Several years of experience as a middle manager in goods production, utilities, transportation or construction are usually required.
- Specialization in a particular functional area or product may occur either through specific university or college training in that area or through previous experience.
- Senior managers in finance usually require a professional accounting designation.

Additional information

- The boundaries of this unit group are defined by the Standard Industrial Classification (SIC). Included are senior managers in the following industries: fishing, logging and forestry; mining, quarrying and oil wells; manufacturing; printing and publishing; construction; transportation and storage; and utilities.

Classified elsewhere

Related middle managers are classified in the following unit and minor groups:

- *Managers in Construction and Transportation* (071)
- *Managers in Manufacturing and Utilities* (091)
- *Primary Production Managers (Except Agriculture)* (0811)

0111 Financial Managers

Financial Managers plan, organize, direct and control the operation of financial departments and develop and implement the financial policies and systems of establishments. They are employed in financial departments in companies throughout the private sector and in government.

Examples of titles classified in this unit group

Controller
Director of Accounting
Manager, Financial Control
Manager, Internal Audit
Manager, Financial Planning and Analysis
Treasurer

Main duties

Financial Managers perform some or all of the following duties:

- Plan, organize, direct and control the operation of an accounting, audit or other financial department
- Develop and implement the financial policies, systems and procedures of an establishment
- Prepare or co-ordinate the preparation of financial statements, estimates, summaries and other financial analyses and management reports
- Evaluate financial reporting systems, accounting procedures and investment activities and make recommendations for changes to procedures, operating systems, budgets and other financial control functions to senior managers and other department or regional managers
- Recruit staff and oversee training programs.

Employment requirements

- A university degree or college diploma in business administration, economics, commerce or a related field
  and
  Completion of company or other management training program are usually required.
- Several years of experience in accounting, auditing, budgeting, financial planning and analysis or other financial activity are required.
- Accounting and audit managers may require a recognized accounting designation.

Additional information

- Progression to senior management positions, such as vice-president of finance, is possible with experience.

Classified elsewhere

- *Banking, Credit and Other Investment Managers* (0122)
- *Senior Managers – Financial, Communications Carriers and Other Business Services* (0013)
- Managers of accounting and auditing firms (in 0123 *Other Business Services Managers*)

1114 Other Financial Officers

This unit group includes professional occupations in finance not elsewhere classified such as financial planners, financial examiners and inspectors, financial investigators, investment underwriters, mortgage brokers and trust officers. They are employed by banks, trust companies, investment firms, governments or they may be self-employed.

Examples of titles classified in this unit group

Estate and Trust Administrator
Examiner, Credit Unions
Financial Consultant
Financial Investigator
Financial Planner
Inspector, Financial Institutions
Investment Underwriter
Mortgage Broker
Trust Officer

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Financial planners identify clients' financial goals and objectives, analyze clients' financial records, develop financial plans for clients and make recommendations concerning cash management, insurance coverage, investment planning, retirement and estate planning. They may also arrange for sale of financial products and investments depending on the licence held.
- Financial examiners and inspectors review and examine banks, trust companies, credit unions, caisses populaires, credit companies, real estate companies, insurance companies, pension funds, securities brokers and other financial services and institutions to ensure compliance with governing legislation and regulations.
- Financial investigators investigate possible unethical conduct or breeches of securities or commodity futures laws by persons or companies that trade in securities and commodity futures or that provide related financial services.
- Investment underwriters underwrite new issues of stocks and bonds, negotiate with corporations and governments to determine the type and terms of new securities issued and prepare offering prospectus.
- Trust officers administer estate, personal, charitable, corporate and other types of trusts, direct trust account investments, receive and record investment income and disburse trust funds.
- Mortgage brokers meet with clients to obtain information about income, liabilities and assets, and type, price and condition of property to be mortgaged, negotiate mortgage loans, and make application for mortgage to lenders or lending institutions on behalf of clients.

Employment requirements

- A bachelor's degree or college diploma in business administration, commerce, economics or a related field is usually required.
- Various training programs and courses are offered by financial institutes and organizations, such as the Canadian Securities Institute, Institute of Chartered Financial Analysts, Investment Funds Institute, Canadian Institute of Financial Planning, Association of Mortgage Brokers and Trust Companies Institute of Canada, and may be required by employers.
- Financial planners who sell regulated financial products and investments, such as annuities, RRSP's and life insurance, are required to be licensed by the appropriate governing body.
- Financial examiners and inspectors may require a recognized accounting designation.
- Mortgage brokers require a real estate licence in Quebec and a mortgage broker licence in Newfoundland, Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

Additional information

- Progression to financial management positions is possible with experience.

Classified elsewhere

- *Financial and Investment Analysts* (1112)
- *Securities Agents, Investment Dealers and Traders* (1113)
- Economic development officers (in 4163 *Economic Development Officers and Marketing Researchers and Consultants*)
- Economists (in 4162 *Economists and Economic Policy Researchers and Analysts*)

1121 Specialists in Human Resources

Specialists in Human Resources develop, implement and evaluate human resources and labour relations policies, programs and procedures and advise managers and employees on personnel matters. Specialists in Human Resources are employed throughout the private and public sectors, or may be self-employed.

Examples of titles classified in this unit group

Business Agent, Labour Union
Classification Officer
Classification Specialist
Compensation Research Analyst
Conciliator
Consultant, Human Resources
Employee Relations Officer
Employment Equity Officer
Human Resources Research Officer
Job Analyst
Labour Relations Officer
Mediator
Union Representative
Wage Analyst

Main duties

Specialists in Human Resources perform some or all of the following duties:

- Develop, implement and evaluate personnel and labour relations policies, programs and procedures
- Advise managers and employees on the interpretation of personnel policies, benefit programs and collective agreements
- Negotiate collective agreements on behalf of employers or workers, and mediate labour disputes and grievances
- Research and prepare occupational classifications, job descriptions and salary scales
- Administer benefit, employment equity and affirmative action programs and maintain related records systems
- Co-ordinate employee performance and appraisal programs
- Research employee benefit and health and safety practices and recommend changes or modifications to existing policies.

Employment requirements

- A university degree or college diploma in a field related to personnel management, such as business administration, industrial relations, commerce or psychology
  or
  Completion of a professional development program in personnel administration is required.
- Some experience in a clerical or administrative position related to personnel administration may be required.

Additional information

- Progression to management positions is possible with experience.

Classified elsewhere

- *Human Resources Managers* (0112)
- *Personnel and Recruitment Officers* (1223)
- *Personnel Clerks* (1442)
- *Professional Occupations in Business Services to Management* (1122)
- Training officers and instructors (in 4131 *College and Other Vocational Instructors*)

1111 Financial Auditors and Accountants

Financial auditors examine and analyze the accounting and financial records of individuals and establishments to ensure accuracy and compliance with accounting procedures. Accountants plan, organize and administer accounting systems for individuals and establishments. Articling students in accounting firms are included in this unit group. Financial Auditors and Accountants are employed by auditing and accounting firms throughout the private and public sectors or they may be self-employed.

Examples of titles classified in this unit group

Accountant
Chartered Accountant (C.A.)
Certified General Accountant (C.G.A.)
Certified Management Accountant (C.M.A.)
Financial Auditor
Internal Auditor

Main duties

Financial auditors perform some or all of the following duties:

- Examine and analyze journal and ledger entries, bank statements, inventories, expenditures, tax returns and other accounting and financial records, documents and systems of an individual, department, company or other establishment to ensure financial recording accuracy and compliance with established accounting standards, procedures and internal controls
- Prepare detailed reports on audit findings and make recommendations to improve individual or establishment's accounting and management practices
- Conduct field audits of businesses to ensure compliance with provisions of the Income Tax Act, Canadian Business Corporations Act or other statutory requirements
- May supervise other auditors.

Accountants perform some or all of the following duties:

- Plan, set up and administer accounting systems and prepare financial information for an individual, department, company or other establishment
- Examine accounting records and prepare financial statements and reports
- Develop and maintain cost finding, reporting and internal control procedures
- Examine financial accounts and records and prepare income tax returns from accounting records
- Analyze financial statements and reports and provide financial, business and tax advice
- May act as a trustee in bankruptcy proceedings
- May supervise articling students or other accountant.

Employment requirements

- Chartered accountants require a university degree
  and
  Completion of a training program approved by the Institute of Chartered Accountants and several years of on-the-job training
  and
  Accreditation by the Institute of Chartered Accountants.
- Certified general accountants and certified management accountants require completion of secondary school and usually require some post-secondary education related to accounting
  and
  Completion of a training program approved by the Society of Certified General Accountants or Society of Management Accountants and several years of on-the-job training
  and
  Accreditation by the Certified General Accountants Association or the Society of Management Accountants.
- Auditors require education, training and accreditation as indicated for chartered accountants, certified general accountants or certified management accountants
  and
  Some experience as an accountant.
- Auditors may require accreditation by the Institute of Internal Auditors.
- To act as a trustee in bankruptcy proceedings, auditors and accountants must hold a license as a trustee in bankruptcy.

- Licensure by the provincial or territorial governing body is usually required for accountants and auditors practicing public accounting.
- In Quebec, membership in the professional corporation for accountants is mandatory.

Additional information

- There is limited mobility among the three professional accounting designations (C.A., C.G.A. and C.M.A.).
- Progression to auditing or accounting management positions is possible with experience.

Classified elsewhere

- *Bookkeepers* (1231)
- *Financial Managers* (0111)
- Program or other non-financial auditors (in 416 *Policy and Program Officers, Researchers and Consultants*)

1122 Professional Occupations in Business Services to Management

This unit group includes those who provide services to management such as analyzing the operations, managerial methods or functions of an organization in order to propose, plan and implement improvements, or analyzing advertising needs and developing appropriate advertising plans. They are employed by management consulting firms, advertising agencies and throughout the public and private sectors or are self-employed.

Examples of titles classified in this unit group

Advertising Account Executive
Business Management Consultant
Business Methods Analyst
Consultant, Organizational Analysis
Management Analyst
Organizational Analyst
Promotion Specialist
Researcher, Organization and Methods
Senior Consultant, Operations Management

Main duties

Management consultants perform some or all of the following duties:

- Analyze and provide advice on the managerial methods and organization of a public or private sector establishment
- Conduct research to determine efficiency and effectiveness of managerial policies and programs
- Propose improvements to methods, systems and procedures in areas such as operations, human resources and communications
- Plan the re-organization of the operations of an establishment
- May supervise contracted researchers or clerical staff.

Advertising and marketing consultants perform some or all of the following duties:

- Assess characteristics of products or services to be promoted and advise on the advertising needs of an establishment
- Advise clients on advertising or sales promotion strategies
- Develop and implement advertising campaigns appropriate for print or electronic media.

Employment requirements

- A bachelor's degree or college diploma in business administration or commerce is usually required.
- A graduate degree in business administration may be required.
- Some establishments may require management consultants to be certified by a provincial management consulting association.

Additional information

- Progression to senior and managerial positions is possible with experience.

Classified elsewhere

- *Economists and Economic Policy Researchers and Analysts* (4162)
- *Financial and Investment Analysts* (1112)
- *Financial Auditors and Accountants* (1111)
- *Industrial and Manufacturing Engineers* (2141)
- *Other Financial Officers* (1114)

1211 Supervisors, General Office and Administrative Support Clerks

Supervisors in this unit group supervise and co-ordinate the activities of workers in the following minor groups: *Clerical Occupations, General Office Skills* (141), *Office Equipment Operators* (142) and *Administrative Support Clerks* (144). They are employed throughout the public and private sectors.

Examples of titles classified in this unit group

Chief Telephone Operator
Clerical Supervisor
Computer Operators Supervisor
Data Entry Supervisor
File Clerks Supervisor
Hospital Admitting Clerks Supervisor
Health Records Supervisor
Office Clerks Supervisor
Personnel Clerks Supervisor
Records Office Supervisor
Registry Supervisor
Supervisor, Photocopy Unit
Supervisor, Switchboard Operators
Typesetting Supervisor
Typing Supervisor
Word Processing Supervisor

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Co-ordinate, assign and review the work of clerks engaged in the following duties: typing and word processing; record keeping and filing; operating telephones and switchboards; computer operating; data entry; typesetting; and other activities involving general office and administrative skills
- Establish work schedules and procedures and co-ordinate activities with other work units or departments
- Resolve work-related problems and prepare and submit progress and other reports
- Train workers in job duties, safety procedures and company policies
- Requisition supplies and materials
- Ensure smooth operation of computer systems, equipment and machinery, and arrange for maintenance and repair work
- May perform the same duties as workers supervised.

Employment requirements

- Completion of secondary school is required.
- Completion of college courses related to area supervised may be required.
- Experience in the occupation supervised is usually required.

Classified elsewhere

- *Supervisors, Finance and Insurance Clerks* (1212)
- *Supervisors, Library, Correspondence and Related Information Clerks* (1213)
- *Supervisors, Mail and Message Distribution Occupations* (1214)
- *Supervisors, Recording, Distributing and Scheduling Occupations* (1215)
- Office managers (in 1221 *Administrative Officers*)

1212 Supervisors, Finance and Insurance Clerks

Supervisors in this unit group supervise and co-ordinate the activities of workers in the following unit groups: *Accounting and Related Clerks* (1431), *Payroll Clerks* (1432), *Tellers, Financial Services* (1433), *Banking, Insurance and Other Financial Clerks* (1434) and *Collectors* (1435). They are employed by banks and other financial institutions, insurance companies, and by other establishments throughout the private and public sectors.

Examples of titles classified in this unit group

Accounts Payable Supervisor
Accounts Receivable Supervisor
Bank Clerk Supervisor
Billing Supervisor
Bookkeeping Supervisor
Collections Supervisor
Credit Supervisor
Head, Billing Unit
Payroll Supervisor
Savings Supervisor
Supervisor of Accounting
Supervisor, Claims Adjusters
Teller Supervisor

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Co-ordinate, assign and review the work of clerks engaged in the following duties: administering accounts payable and receivable; processing, verifying and recording financial documents and forms; administering payrolls; serving customers in banks, trust companies and other financial institutions; processing, verifying and recording insurance claims and forms; and collecting payments on overdue accounts
- Examine and verify accuracy of work and authorize routine payments, credits, deposits and withdrawals
- Establish work schedules and procedures and co-ordinate activities with other work units or departments
- Resolve work-related problems and prepare and submit progress and other reports
- Train workers in job duties and company policies
- Requisition supplies and materials
- Ensure smooth operation of computer systems and equipment and arrange for maintenance and repair work
- May perform the same duties as workers supervised.

Employment requirements

- Completion of secondary school is required.
- Completion of a college program or courses in bookkeeping, accounting or a related subject may be required.
- Experience in the clerical occupation supervised is required.

Classified elsewhere

- *Financial Managers* (0111)
- *Other Financial Officers* (1114)

1213 Supervisors, Library, Correspondence and Related Information Clerks

Supervisors in this unit group supervise and co-ordinate the activities of workers in the following unit groups: *Library Clerks* (1451), *Correspondence, Publication and Related Clerks* (1452), *Customer Service, Information and Related Clerks* (1453) and *Survey Interviewers and Statistical Clerks* (1454). They are employed throughout the private and public sectors.

Examples of titles classified in this unit group

Advertising Clerk Supervisor
Correspondence Clerk Supervisor
Customer Service Supervisor (Except Financial Institutions)
Information Clerk Supervisor
Library Clerk Supervisor
Publication Clerk Supervisor
Statistical Clerk Supervisor
Supervisor, Survey Interviewers

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Co-ordinate, assign and review the work of clerks engaged in the following duties: conducting surveys and interviews; collecting and compiling statistics; providing information and customer service; reshelving books and performing other tasks in libraries; writing correspondence and preparing material for translation and publication
- Establish work schedules and procedures and co-ordinate activities with other work units or departments
- Resolve work-related problems and prepare and submit progress and other reports
- Train workers in job duties and company policies
- Requisition supplies and materials
- Ensure smooth operation of computer systems and equipment and arrange for maintenance and repair work
- May perform the same duties as workers supervised.

Employment requirements

- Completion of secondary school is usually required.
- Experience in the clerical occupation supervised is usually required.

Classified elsewhere

- *Librarians* (5111)
- *Library and Archive Technicians and Assistants* (5211)
- *Supervisors, Mail and Message Distribution Occupations* (1214)

1214 Supervisors, Mail and Message Distribution Occupations

Supervisors in this unit group supervise and co-ordinate the activities of workers in the following unit groups: *Mail, Postal and Related Clerks* (1461), *Letter Carriers* (1462) and *Couriers and Messengers* (1463). They are employed by Canada Post Corporation, courier companies, governments and by large corporations.

Examples of titles classified in this unit group

Courier Supervisor
Letter Carrier Supervisor
Mail and Postal Clerk Supervisor
Mail Room Supervisor
Messenger Supervisor
Postal Station Supervisor
Postmaster

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Co-ordinate, assign and review the work of postal clerks, letter carriers and couriers engaged in the collecting, sorting and delivering of mail, parcels and other material
- Establish work schedules and procedures and co-ordinate activities with other work units or departments
- Resolve work-related problems and prepare and submit progress and other reports
- Train workers in job duties, safety procedures and company policies
- Requisition supplies and materials
- Ensure smooth operation of computer systems and equipment and arrange for maintenance and repair work
- May perform the same duties as workers supervised.

Employment requirements

- Completion of secondary school is required.
- Experience in the occupation supervised is usually required.

Classified elsewhere

- *Postal and Courier Services Managers* (0132)
- Shipping and receiving supervisors (in 1215 *Supervisors, Recording, Distributing and Scheduling Occupations*)

1215 Supervisors, Recording, Distributing and Scheduling Occupations

Supervisors in this unit group supervise and co-ordinate the activities of workers in the following unit groups: *Shippers and Receivers* (1471), *Storekeepers and Parts Clerks* (1472), *Production Clerks* (1473), *Purchasing and Inventory Clerks* (1474), *Dispatchers and Radio Operators* (1475) and *Transportation Route and Crew Schedulers* (1476). They are employed throughout the private and public sectors.

Examples of titles classified in this unit group

Head Dispatcher
Head Shipper
Inventory Control Supervisor
Flight Crew Scheduling Supervisor
Parts Supervisor
Production Clerks Supervisor
Ramp Services Supervisor, Airport
Stock Control Supervisor
Supervisor of Receiving
Supply Control Co-ordinator
Tool Crib Supervisor
Traffic Control Supervisor

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Co-ordinate, assign and review the work of clerks engaged in the following duties: shipping, receiving, storing, distributing and maintaining inventories of materials, parts and products; processing purchasing transactions; co-ordinating production work; dispatching crews; scheduling transportation crews and routes; operating airport ramp servicing vehicles; and other related activities
- Establish work schedules and procedures and co-ordinate activities with other work units or departments
- Resolve work-related problems and prepare and submit progress and other reports
- Train workers in job duties, safety procedures and company policies
- Requisition supplies and materials
- Ensure smooth operation of computer systems, equipment and machinery and arrange for maintenance and repair work
- May perform the same duties as workers supervised.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience in the occupation supervised are usually required.

Classified elsewhere

- *Supervisors, Mail and Message Distribution Occupations* (1214)

1223 Personnel and Recruitment Officers

Personnel and Recruitment Officers identify and advertise job vacancies, recruit candidates, and assist in the selection and reassignment of employees. They are employed throughout the private and public sectors.

Examples of titles classified in this unit group

Human Resources Officer
Personnel Officer
Personnel Selection Officer
Placement Officer
Recruitment Officer
Staffing Analyst
Staffing Officer

Main duties

Personnel and Recruitment Officers perform some or all of the following duties:

- Identify current and prospective vacancies, post notices and advertisements, and collect and screen applications
- Advise job applicants on employment requirements
- Review candidate inventories and contact potential applicants to arrange interviews
- Recruit graduates of colleges, universities and other educational institutions
- Co-ordinate and participate in selection and examination boards to evaluate candidates
- Notify applicants of results of competitions
- Advise managers and employees on staffing policies and procedures
- May supervise personnel clerks performing filing, typing and record-keeping duties.

Employment requirements

- A university degree or college diploma in a field related to personnel management such as business administration, industrial relations, commerce or psychology
  or
  Completion of a professional development program in personnel administration is usually required.
- Some experience in a clerical or administrative position related to personnel administration may be required.

Additional information

- Progression to specialist and management positions is possible with experience.

Classified elsewhere

- *Human Resources Managers* (0112)
- *Personnel Clerks* (1442)
- *Specialists in Human Resources* (1121)
- Training officers and instructors (in 4131 *College and Other Vocational Instructors*)

1224 Property Administrators

Property Administrators perform administrative duties and co-ordinate activities related to the management and rental of investment property and real estate on behalf of property owners. They are employed by property and real estate management companies, property development companies and by government.

Examples of titles classified in this unit group

Accommodation Officer
Government Property Manager
Leasing Co-ordinator, Property
Property Administrator
Property Manager
Property Officer

Main duties

Property Administrators perform some or all of the following duties:

- Negotiate or approve rental or lease of various properties in a portfolio on behalf of property owners and ensure that terms of lease agreement are met
- Prepare and administer contracts for provision of property services, such as cleaning and maintenance, security services and alarm systems
- Co-ordinate the implementation of repairs, maintenance and renovations carried out on buildings and monitor progress and cost of work for property owners
- Compile and maintain records on operating expenses and income and prepare reports
- Ensure that trouble calls received from clients or tenants are acted upon
- May hire and supervise rental agents, property clerks, building superintendents or other support staff performing operational, clerical or maintenance duties.

Employment requirements

- Completion of secondary school is required.
- Completion of training courses or vocational program in property management or real estate may be required.
- Several years of administrative experience as a property clerk, contract clerk, or administrative officer are usually required.

Classified elsewhere

- *Real Estate Agents and Salespersons* (6232)
- Building superintendents (in 6663 *Janitors, Caretakers and Building Superintendents*)
- Property clerks (in 1441 *Administrative Clerks*)

1225 Purchasing Agents and Officers

Purchasing Agents and Officers purchase general and specialized equipment, materials and business services for use or for further processing by their establishment. They are employed throughout the public and private sectors.

Examples of titles classified in this unit group

Contract Management Officer
Contracting Officer
Material Management Officer
Procurement Officer
Purchaser, Furniture and Furnishings
Purchasing Agent
Purchasing Officer
Supply Officer, Government

Main duties

Purchasing Agents and Officers perform some or all of the following duties:

- Purchase general and specialized equipment, materials or business services for use or for further processing by their establishment
- Assess requirements of an establishment and develop specifications for equipment, materials and supplies to be purchased
- Invite tenders, consult with suppliers and review quotations
- Determine contract terms and conditions, award contracts or recommend contract awards
- Establish delivery schedules, monitor progress and contact clients and suppliers to resolve problems
- May hire, train or supervise purchasing clerks.

Purchasing agents and officers may specialize in the purchase of particular materials or business services such as furniture or office equipment.

Employment requirements

- A bachelor's degree or college diploma in business administration, commerce or economics is usually required.
- Purchasing agents and officers purchasing specialized materials or business services may require a related university degree or college diploma. For example, a bachelor's degree or college diploma in engineering may be required for purchasers of industrial products.
- Previous experience as a purchasing clerk or as an administrative clerk may be required.

Additional information

- Progression to managerial positions is possible with experience.

Classified elsewhere

- *Purchasing and Inventory Clerks* (1474)
- *Purchasing Managers* (0113)
- *Retail and Wholesale Buyers* (6233)

1226 Conference and Event Planners

Conference and Event Planners plan, organize and co-ordinate conferences, conventions, meetings, seminars, exhibitions, trade shows, festivals and other events. They are employed by tourism associations, trade and professional associations, convention and conference centres, governments and by conference and event planning companies.

Examples of titles classified in this unit group

Conference and Meeting Planner
Conference Planner
Conference Services Officer
Convention Co-ordinator
Event Planner
Festival Organizer
Meeting Planner
Special Events Organizer
Trade Show Planner

Main duties

Conference and Event Planners perform some or all of the following duties:

- Meet with trade and professional associations and other groups to promote and discuss conference, convention and trade show services
- Meet with sponsors and organizing committees to plan scope and format of events, to establish and monitor budgets and to review administrative procedures and progress of events
- Co-ordinate services for events, such as accommodation and transportation for participants, conference and other facilities, catering, signage, displays, translation, audio-visual equipment, printing and security
- Organize registration of participants, prepare programs and promotional material, and publicize events
- Plan entertainment and social gatherings for participants
- Hire, train and supervise support staff required for events
- Approve invoices, maintain financial records and prepare reports.

Employment requirements

- A university degree or college diploma in business, tourism or hospitality administration is usually required.
- Several years of experience in hospitality or tourism administration or in public relations are usually required and may substitute for formal education requirements.

Classified elsewhere

- *Administrative Officers* (1221)
- *Executive Assistants* (1222)
- *Professional Occupations in Public Relations and Communications* (5124)
- *Sales Representatives, Wholesale Trade (Non-Technical)* (6411)

1227 Court Officers and Justices of the Peace

Court Officers co-ordinate the administrative and procedural functions of federal and provincial courts, such as scheduling trials and overseeing the maintenance of court records. Justices of the Peace administer oaths, issue subpoenas, summonses and warrants and perform other court-related duties such as conducting bail hearings. They are employed by federal and provincial courts.

Examples of titles classified in this unit group

Administrator of the Court
Clerk of the Court
Commissioner of Affidavits
Commissioner of Marriages
Co-ordinator of Court Services
Court Administrator
Court Clerk Supervisor
Court Officer
Court Registrar
Deputy Registrar
Judicial Administrator
Judicial Court Administrator
Judicial Officer
Justice of the Peace
Manager, Court Services
Registrar of Bankruptcy
Supreme Court Registrar
Trial Co-ordinator

Main duties

Court officers perform some or all of the following duties:

- Co-ordinate administrative services and establish work priorities for court staff
- Schedule court trials and arrange pre-trial conferences and hearings
- Record court commencement, trial proceedings and judgements
- Collect and record sheriff fees, transcription fees and other court administrative and services fees
- Oversee the maintenance of judicial court records
- Assist in preparing annual budgets
- May be justices of the peace.

Justices of the peace perform some or all of the following duties:

- Issue subpoenas, summonses and warrants, including search warrants
- Receive affidavits, declarations and affirmations
- Administer oaths
- Conduct bail hearings
- Release defendants on judges' orders and explain rights and obligations
- Perform civil marriages.

Employment requirements

- Court officers usually require a university degree in law or business or public administration or a college diploma in public administration or legal studies.
- Completion of a justice registrar, justice of the peace or other court training program is required for court officers and justices of the peace.
- Several years of experience as a court clerk or in another court service occupation are usually required.
- Justices of the peace are appointed by provincial attorneys general.

Additional information

- Progression to senior positions such as senior court administrator is possible through experience.

Classified elsewhere

- *Administrative Officers* (1221)
- *Court Clerks* (1443)
- *Paralegal and Related Occupations* (4211)
- *Sheriffs and Bailiffs* (6461)

1228 Immigration, Unemployment Insurance and Revenue Officers

This unit group includes government officers who administer and enforce laws and regulations related to immigration, unemployment insurance, customs and tax revenue. They are employed by government agencies.

Example of titles classified in this unit group

Customs Inspector
Customs Officer
Immigration Agent
Immigration Examining Officer
Tax Collection Officer
Tax Enforcement Officer
Revenue Officer
Unemployment Insurance Officer
Unemployment Insurance Agent

Main duties

Immigration officers perform some or all of the following duties:

- Determine admissibility of persons seeking entry into Canada by examining documents and conducting interviews
- Grant landed-immigrant status, admit persons or order detention or deportation
- Locate and apprehend persons presumed to be infringing on immigration laws
- Assist in the removal of deported people by seeking authorization from receiving countries and securing necessary travel documents
- Appear as a witness in cases related to immigration appeals.

Unemployment insurance officers perform some or all of the following duties:

- Determine the eligibility of persons applying for unemployment insurance benefits
- Ascertain the facts on such issues as reasons for loss of employment and availability for work
- Monitor the payments of benefits throughout the duration of a claim and investigate claimants when there appears to be fraud or abuse.

Customs officers and inspectors perform some or all of the following duties:

- Question persons at border points to determine the admissibility of goods and assess duty
- Inspect baggage to detect undeclared merchandise, or contraband
- Inform manufacturers and shippers of customs and laws and procedures
- Observe fabrication of articles affected by customs laws and conduct appraisals
- Board carriers arriving from foreign countries to determine nature of cargo to ensure compliance with customs and commerce laws
- Inspect goods imported by mail.

Excise tax revenue officers perform some or all of the following duties:

- Audit accounting records to determine income, exemptions, payable taxes, compliance with reporting regulations and existence of fraud
- Examine accounting systems and internal controls of organizations
- Provide advice on reporting and measurement procedures for goods subject to taxation
- Prepare briefs and assist in searching and seizing records, and in preparing charges for court cases.

Employment requirements

- A bachelor's degree or college diploma is usually required.
- Several years of related administrative or regulatory experience may be required.
- Completion of specialized government training program is required.

Additional information

- Progression to managerial positions in these fields is possible with experience.

Classified elsewhere

- *Financial Auditors and Accountants* (1111)
- *Other Financial Officers* (1114)
- *Social Policy Researchers, Consultants and Program Officers* (4164)
- Managers responsible for immigration or unemployment insurance (in 0411 *Government Managers in Health and Social Policy Development and Program Administration*)
- Managers responsible for taxation revenue or customs (in 0412 *Government Managers in Economic Analysis, Policy Development and Program Administration*)

1231 Bookkeepers

Bookkeepers maintain complete sets of books, keep records of accounts, verify the procedures used for recording financial transactions, and provide personal bookkeeping services. They are employed throughout the private and public sectors, or they may be self-employed.

Examples of titles classified in this unit group

Accounting Bookkeeper

Bookkeeper

Main duties

Bookkeepers perform some or all of the following duties:

- Keep financial records and establish, maintain and balance various accounts using manual and computerized bookkeeping systems
- Post journal entries and reconcile accounts, prepare trial balance of books, maintain general ledgers and prepare financial statements
- Calculate and prepare cheques for payrolls and for utility, tax and other bills
- Complete and submit tax remittance forms, workers' compensation forms, pension contribution forms and other government documents
- Prepare tax returns and perform other personal bookkeeping services
- Prepare other statistical, financial and accounting reports.

Employment requirements

- Completion of secondary school is required.
- Completion of a college program in accounting, bookkeeping or a related field
  or
  Completion of two years (first level) of a recognized professional accounting program (e.g., Chartered Accounting, Certified General Accounting)
  or
  Courses in accounting or bookkeeping combined with several years of experience as a financial or accounting clerk are required.

Additional information

- Progression to professional accounting occupations is possible with additional training.

Classified elsewhere

- *Accounting and Related Clerks* (1431)
- *Banking, Insurance and Other Financial Clerks* (1434)
- *Financial Auditors and Accountants* (1111)
- *Payroll Clerks* (1432)

1232 Loan Officers

Loan Officers examine, evaluate and process credit and loan applications. They are employed by banks, trust companies, credit unions and similar financial institutions.

Examples of titles classified in this unit group

Credit Officer
Loan Officer
Mortgage Officer

Main duties

Loan Officers perform some or all of the following duties:

- Interview applicants for personal, mortgage, student and business loans
- Research and evaluate loan applicant's financial status, references, credit and ability to repay the loan
- Complete credit and loan documentation
- Submit credit and loan applications to management with recommendations for approval or rejection, or approve or reject applications within authorized limits
- Promote the sale of credit and loan services
- Review and update credit and loan files
- Prepare statements on delinquent accounts and forward irreconcilable accounts for collector action.

Employment requirements

- Completion of secondary school and extensive general banking experience
  or
  A bachelor's degree or college diploma related to commerce or economics is required.
- Completion of loan or credit training program, ranging from six to twelve months, is usually required.

Additional information

- Progression to credit and loan management positions is possible with experience.

Classified elsewhere

- Credit and loan managers (in 0122 *Banking, Credit and Other Investment Managers*)

1233 Insurance Adjusters and Claims Examiners

Insurance adjusters investigate insurance claims and determine the amount of loss or damages covered by insurance policies. They are employed in claims departments of insurance companies or as independent adjusters. Insurance claims examiners examine claims investigated by insurance adjusters and authorize payments. They are employed at head offices or branches of insurance companies.

Examples of titles classified in this unit group

Adjuster
Claim Examiner
Insurance Adjuster

Main duties

Insurance adjusters perform some or all of the following duties:

- Investigate circumstances surrounding insurance claims to determine validity of claim
- Inspect automobile, home or other property damage
- Take statements and consult with claimants, accident witnesses, doctors and other relevant individuals and examine records or reports
- Determine amount of loss or damages covered by insurance policies
- Negotiate settlement of claims
- Prepare adjustment reports.

Insurance claims examiners perform some or all of the following duties:

- Review, examine, calculate and authorize insurance claims investigated by insurance adjusters
- Examine adjusters' reports and similar insurance claims or precedents to determine extent of insurance coverage
- Ensure claims are valid and settlements are made according to company practices and procedures
- Consult lawyers, doctors or other relevant individuals to discuss insurance claims
- Approve automobile, fire, life, disability, dental or other insurance claims.

Employment requirements

- Completion of secondary school is required.
- A bachelor's degree, college diploma or some post-secondary education
  or
  Several years of experience as a clerk in the claims department or other general insurance experience are required.
- Several years of on-the-job training and completion of insurance industry courses and training programs are required.
- Independent adjusters require a provincial licence issued by the Superintendent of Insurance in the province or territory of employment.

Additional information

- Completion of educational programs through the Insurance Institute of Canada or its provincial counterpart entitles insurance adjusters and claims examiners to professional recognition as an Associate of The Insurance Institute of Canada (A.I.I.C.).

Classified elsewhere

- *Supervisors, Finance and Insurance Clerks* (1212)

1234 Insurance Underwriters

Insurance Underwriters review and evaluate insurance applications to determine insurance risks, insurance premiums and extent of insurance coverage according to company policies. Insurance Underwriters are employed at head and branch offices of insurance companies.

Examples of titles classified in this unit group

Insurance Underwriter

Property Underwriter

Main duties

Insurance Underwriters perform some or all of the following duties:

- Review individual and group applications for automobile, fire, health, liability, life, property, marine, aircraft and other insurance
- Evaluate new and renewal applications to determine insurance risks, insurance premiums, extent of insurance coverage and other conditions of the insurance contract using medical reports, rate tables and other documents and reference materials
- Approve sale of insurance policies and ensure compliance with government regulations
- Provide recommendations on individual or group insurance plan designs
- Provide underwriting advice and answer inquiries from clients and from insurance agents, consultants and other company personnel
- Prepare underwriting reports.

Employment requirements

- Completion of secondary school and some general insurance experience
  or
  A bachelor's degree, college diploma or some post-secondary education is required.
- Several years of on-the-job training and completion of insurance industry underwriting courses and training programs are required.

Additional information

- Progression to management positions, such as underwriter manager, is possible with experience.
- Completion of educational programs through the Insurance Institute of Canada or a provincial counterpart entitles insurance underwriters to professional recognition as an Associate of The Insurance Institute of Canada (A.I.I.C.) or Fellow of The Insurance Institute of Canada (F.I.I.C.).

Classified elsewhere

- *Insurance Agents and Brokers* (6231)
- Underwriter managers (in 0121 *Insurance, Real Estate and Financial Brokerage Managers*)

1235 Assessors, Valuators and Appraisers

Assessors, Valuators and Appraisers determine the value of land, businesses, estates and other real property, for purposes of sale, purchase, taxation or disposal of assets. Appraisers also determine the value of personal and household items. Assessors, Valuators and Appraisers are employed by government agencies, real estate and other private sector companies or may be self-employed.

Examples of titles classified in this unit group

Property Assessor
Business Valuator
Property Valuator
Real Estate Appraiser

Main duties

Assessors perform some or all of the following duties:

- Assess value of land, buildings, structures, machinery, equipment and property improvements for purposes of taxation, grants and regional planning and prior to sale or purchase
- Review and analyze data such as past sales, title searches, engineering and alignment maps, soil maps, subdivision plans, water and sewer plans, location cost data and easements
- Explain assessment process to ratepayers.

Assessors may specialize in counselling and advising in a specific field of assessment such as residential, commercial, industrial, institutional or farm lands.

Valuators perform some or all of the following duties:

- Collect and analyze financial records of a business, such as financial statements, budgets, projections and sales data, to assess its competitiveness or to estimate its market value
- Prepare reports for estate planning, matrimonial litigation, insurance and business losses
- Appear as an expert witness before courts, security regulators and other regulatory boards and commissions.

Appraisers perform some or all of the following duties:

- Appraise value of property, buildings, industrial and commercial machinery and equipment and personal and household items
- Prepare appraisal reports for lending agencies, insurance companies, government departments, courts, attorneys, creditors, buyers or auctioneers.

Appraisers may specialize in a specific type of appraisal such as real estate appraisal.

Employment requirements

- Assessors require a college diploma in municipal assessment
  and
  Accreditation with the municipal assessment association of the province.
- Valuators usually require a bachelor's degree or college diploma in accounting, business or commerce
  and
  Accreditation with the Canadian Institute of Chartered Business Valuators based on successful completion of their business and securities valuation program.
- Appraisers require a college diploma or vocational training in the field of appraisal
  or
  Several years of experience in a position related to the field of appraisal.
- Real estate appraisers usually require several years of experience as a real estate agent, right-of-way agent or property administrator.
- Appraisers of residential, commercial or industrial property require accreditation with the Appraisal Institute of Canada.

Additional information

- Progression to management positions in each field is possible with experience.

Classified elsewhere

- *Financial Auditors and Accountants* (1111)
- *Financial and Investment Analysts* (1112)
- *Insurance Adjusters and Claims Examiners* (1233)
- *Property Administrators* (1224)
- Market analysts (in 4163 *Economic Development Officers and Marketing Researchers and Consultants)*
- Right-of-way agents (in 1225 *Purchasing Agents and Officers*)

1236 Customs, Ship and Other Brokers

Customs brokers clear goods through customs and to their destination on behalf of importer and exporter clients. Ship brokers buy and sell ships, yachts and cargo space on ships on behalf of clients. This unit group also includes other brokers, not elsewhere classified, who negotiate commercial transactions or other services between parties on behalf of clients. They are employed by customs, ship or other brokerage establishments or may be self-employed.

Examples of titles classified in this unit group

Cargo Broker
Chartered Ship Broker
Customs Broker
Gas Broker
Licensed Customs Broker
Ship Broker

Main duties

Customs brokers perform some or all of the following duties:

- Prepare and process import/export documents and other forms on behalf of clients according to customs regulations, laws and procedures
- Sign import/export documents on behalf of client, using power of attorney
- Arrange for payment of duties, taxes, storage and transportation of imported goods and bonds to cover duty goods
- Quote duty and tax rates on commodities for clients
- Provide advice to clients on export and import restrictions, tariff systems, letters of credit, insurance requirements and other custom related matters
- May represent client before administrative tribunals or in other dealings with government officials.

Ship brokers perform some or all of the following duties:

- Buy and sell cargo space on ships on behalf of individuals, companies and governments
- Consult trade publications and other sources to provide information to clients on available cargo space, destinations, rates and departure locations and times
- Negotiate rates and terms and prepare contracts and other papers
- Buy and sell ships and yachts on behalf of clients
- Inspect vessels, explain features and negotiate price when purchasing or selling for clients
- Arrange for insurance coverage for cargo or for ships
- Arrange for registration and licensing of ships.

Employment requirements

- Completion of secondary school is required.
- Some post-secondary education in commerce or a related field may be required.
- Customs brokers require several years of on-the-job training and completion of a customs brokers training program through the Canadian Institute of Customs Brokers.
- A customs broker license, issued by Customs and Excise, is required for an individual or company to operate a customs brokerage business.
- Ship brokers require several years of on-the-job training.
- Correspondence courses from the Institute of Chartered Ship Brokers are available for ship brokers.

Additional information

- There is no mobility between the different types of brokers in this unit group.

Classified elsewhere

- *Insurance, Real Estate and Financial Brokerage Managers* (0121)
- *Securities Agents, Investment Dealers and Traders* (1113)
- Insurance brokers (in 6231 *Insurance Agents and Brokers*)

1241 Secretaries (Except Legal and Medical)

Secretaries perform a variety of administrative duties in support of managerial and professional employers. They are employed throughout the private and public sectors.

Examples of titles classified in this unit group

Executive Secretary
Private Secretary
Secretary
Technical Secretary

Main duties

Secretaries perform some or all of the following duties:

- Type correspondence, reports, minutes, invoices and related material from shorthand, machine dictation and handwritten copy using a computer, word processor or typewriter
- Open and distribute incoming mail and other material and co-ordinate the flow of information internally and with other departments and organizations
- Schedule and confirm employer's appointments and meetings
- Answer telephone enquiries and relay telephone calls
- Set up and maintain information filing systems
- Greet visitors, ascertain nature of business and direct visitors to employer or appropriate person
- Take shorthand and record and prepare minutes of meetings
- Arrange employer's travel schedules and make reservations
- Prepare routine correspondence and compile data, statistics and other information
- May supervise other office workers.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a one or two-year college or other program for secretaries
  or
- Previous clerical experience is required.

Classified elsewhere

- *Executive Assistants* (1222)
- *Legal Secretaries* (1242)
- *Medical Secretaries* (1243)
- *Court Recorders and Medical Transcriptionists* (1244)
- Office managers (in *1221 Administrative Officers*)

1242 Legal Secretaries

Legal Secretaries perform a variety of secretarial and administrative duties in law offices, legal departments of large firms, real estate companies, land title offices, municipal, provincial and federal courts and government.

Examples of titles classified in this unit group

Estate Secretary
Legal Secretary
Litigation Secretary
Real Estate Secretary

Main duties

Legal Secretaries perform some or all of the following duties:

- Type correspondence and legal documents, such as deeds, wills, affidavits and briefs, from handwritten copy, shorthand and machine dictation, using typewriters, word processors and computers
- Schedule appointments, meetings and conferences for employer
- Set up and maintain filing systems, utilizing knowledge of legal records and procedures and frequently controlling confidential materials and documents
- Open and distribute incoming mail and other material and co-ordinate the flow of information internally and with other departments or organizations; may operate electronic mail systems
- Review and proofread outgoing documents and correspondence to ensure compliance with legal procedures and grammatical usage
- May attend court, meetings or conferences to take notes, minutes and dictation
- May perform other general office work as required including preparing financial statements and supervising office workers.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a one or two-year college or other program for secretaries or legal secretaries is usually required.

Classified elsewhere

- *Paralegal and Related Occupations* (4211)
- By-law clerks (in 1441 *Administrative Clerks*)
- Court recorders (in 1244 *Court Recorders and Medical Transcriptionists*)

1243 Medical Secretaries

Medical Secretaries perform a variety of secretarial and administrative duties in doctor's offices, hospitals, medical clinics and other medical settings.

Examples of titles classified in this unit group

Medical Secretary

Ward Secretary

Main duties

Medical Secretaries perform some or all of the following duties:

- Schedule and confirm medical appointments and receive and communicate messages for doctors and patients
- Type medical records, reports, articles, case histories and correspondence from machine dictation, shorthand and handwritten notes using typewriters, word processors and computers
- Interview patients in order to complete forms, documents and case histories
- Complete insurance and other claim forms
- Initiate and maintain confidential medical files and records
- Prepare financial statements and handle billing procedures
- Order supplies and maintain inventory
- May take dictation using shorthand
- May perform other general office work as required.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a one or two-year college program or other specialized courses for secretaries or medical secretaries is usually required.

Classified elsewhere

- Medical records clerks (in 1413 *Records and File Clerks*)
- Medical transcriptionists (in 1244 *Court Recorders and Medical Transcriptionists*)

1244 Court Recorders and Medical Transcriptionists

Court Recorders record and transcribe verbatim proceedings of courts, legislative assemblies and committees, and prepare dictated reports, correspondence and statistics that require knowledge of legal terminology. They are employed by courts of law, provincial and federal legislative assemblies and committees, or they may be self-employed. Medical Transcriptionists record and transcribe surgical proceedings, medical records and other reports requiring knowledge of medical terminology. They are employed by hospitals, medical clinics and doctors' offices, or they may be self-employed.

Examples of titles classified in this unit group

Court Recorder
Court Reporter
Court Stenographer
Hansard Reporter
Medical Transcriptionist
Transcriptionist

Main duties

Court Recorders perform some or all of the following duties:

- Record verbatim proceedings of courtroom using stenomask, stenograph machine or computerized recording equipment
- Transcribe recorded proceedings in accordance with established formats
- Verify transcripts by checking copy against original record of proceedings
- Research and locate quotes to ensure accuracy.

Medical Transcriptionists perform some or all of the following duties:

- Transcribe machine dictation or rough notes from medical reports, correspondence, medical records and patient information
- Proofread work for typographical and grammatical errors.

Employment requirements

- Completion of secondary school is required.
- Completion of a college or other program in court reporting or medical transcription is required.

Additional information

- There is some mobility between occupations in this unit group and other occupations requiring similar knowledge of legal or medical terminology such as legal secretary or medical secretary.

Classified elsewhere

- *Legal Secretaries* (1242)
- *Medical Secretaries* (1243)

1411 General Office Clerks

General Office Clerks type and file correspondence, reports, statements and other material, operate office equipment, answer telephones and perform clerical duties of a general nature according to established procedures. They are employed in offices throughout the public and private sectors.

Examples of titles classified in this unit group

Administrative Assistant
General Office Clerk
Office Assistant
Office Clerk

Main duties

General Office Clerks perform some or all of the following duties:

- Type and proofread correspondence, reports, statements, invoices, forms and other documents, from notes or dictaphone, using typewriters, word processors and computers
- Receive and forward telephone or counter enquiries to appropriate person and provide general information to clients and the public
- Photocopy and collate documents for distribution, mailing and filing
- Maintain and update manual or computerized filing, inventory, mailing and database systems
- Open, sort and route incoming mail
- Send and receive messages using telex or facsimile machine
- May perform routine bookkeeping tasks such as preparing invoices and bank deposits
- May sort, process and verify applications, receipts, expenditures, forms and other documents.

Employment requirements

- Completion of secondary school is usually required.
- Completion of secondary school or college business or commercial courses is usually required.
- Ability to type or operate a word processor is usually required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Administrative Clerks* (1441)
- *Receptionists and Switchboard Operators* (1414)
- *Records and File Clerks* (1413)
- *Secretaries (Except Legal and Medical)* (1241)
- *Supervisors, General Office and Administrative Support Clerks* (1211)
- *Typists and Word Processing Operators* (1412)

1412 Typists and Word Processing Operators

Typists and Word Processing Operators type correspondence, reports, text and other written material using a typewriter, word processor or computer. Typists and Word Processing Operators are employed in offices and word processing units throughout the public and private sectors.

Examples of titles classified in this unit group

Dicta-Typist
Teletype Operator
Typist
Word Processor Clerk
Word Processing Operator

Main duties

Typists perform some or all of the following duties:

- Receive and register correspondence, reports, text and other written material for typing
- Prepare and format page as required for type of document
- Type and proofread correspondence, reports, statements, invoices, forms and other material
- May photocopy, collate and file documents.

Word Processing Operators perform some or all of the following duties:

- Receive and register correspondence, reports, text and other written material for word processing
- Prepare word processor and computer word processing software as required for type of document
- Operate word processors and computers to input letters, reports and data onto diskettes, disks and tapes for printing and storage
- Proofread material and operate printer to print documents
- Label, copy and store diskettes, disks and tapes and maintain inventory of stored material
- May photocopy, collate and file documents.

Employment requirements

- Some secondary school education is required.
- Completion of secondary school, college or other courses in keyboarding and word processing may be required.
- Ability to type or operate a word processor is required.

Additional information

- Progression to supervisory positions is possible with additional training or experience.

Classified elsewhere

- *Computer Operators* (1421)
- *Data Entry Clerks* (1422)
- *General Office Clerks* (1411)
- *Secretaries (Except Legal and Medical)* (1241)
- Word processing supervisors (in 1211 *Supervisors, General Office and Administrative Support Clerks*)

1413 Records and File Clerks

Records clerks process, code, store and retrieve records and documents and apply retention and disposal schedules according to established policies and procedures. File clerks file papers, records, documents and other material according to subject matter or other filing system. Records and file clerks are employed throughout the private and public sectors. This unit group also includes health records technicians, who maintain systems for the collection, storage, retrieval and retention of health information. Health records technicians are employed by hospitals, clinics and other health care institutions.

Examples of titles classified in this unit group

Aircraft Records Clerk
File and Classification Clerk
File Clerk
Health Records Technician
Medical Records Clerk
Microfilm Records Searcher
Records Classifier
Records Clerk
Records System Clerk
Technical Records Clerk

Main duties

Records clerks perform some or all of the following duties:

- Classify, code, cross-reference and store records
- Maintain indexes for classification systems
- Operate information retrieval systems and respond to requests for records
- Review files periodically to ensure they are complete and correctly classified
- Label files according to retention and disposal schedules and prepare files for disposal
- Maintain access lists for security classified records
- Compile statistics and reports on activities within records services.

File clerks perform some or all of the following duties:

- Sort material that is to be filed according to particular filing systems
- File material in drawers, cabinets and storage boxes
- Locate and remove materials from files when requested
- Keep records of materials filed and removed.

Health records technicians perform some or all of the following duties:

- Classify, code, cross-reference and store health records and related information
- Maintain indexes for classification systems
- Operate information retrieval systems and respond to requests for health record information
- Prepare medical, social and administrative statistics
- Apply knowledge of medical terminology, physiology and treatments.

Employment requirements

- Health records technicians require completion of a two to three-year college or other program in health records management *and*
  Certification by the Canadian Health Record Association.
- Records clerks and file clerks usually require completion of secondary school.
- Records clerks may require completion of college or other program in records management and usually require experience as a file clerk.

Additional information

- Health records technicians are nationally certified and are eligible for employment in all provinces and territories.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *General Office Clerks* (1411)
- *Library Clerks* (1451)
- Health record unit supervisors (in 1211 *Supervisors, General Office and Administrative Support Clerks*)
- Health records administrators (in 0114 *Other Administrative Services Managers*)
- Library technicians (in 5211 *Library and Archive Technicians and Assistants*)
- Records management supervisors (in 1211 *Supervisors, General Office and Administrative Support Clerks*)
- Records systems analysts (in 1122 *Professional Occupations in Business Services to Management*)

1414 Receptionists and Switchboard Operators

Receptionists and Switchboard Operators greet people arriving at offices, hospitals and other establishments, direct visitors to appropriate person or service, answer and forward telephone calls, take messages, schedule appointments and perform other clerical duties. They are employed by hospitals, medical and dental offices and in other offices throughout the public and private sectors.

Examples of titles classified in this unit group

Admitting Clerk
Answering Service Operator
Business Receptionist
Dental Receptionist
Hospital Admitting Clerk
Medical Receptionist
Reception Clerk
Receptionist
Switchboard Operator
Telereceptionist

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Receptionists greet people coming into offices and other establishments, direct them to the appropriate contacts or services, and provide basic information.
- Hospital admitting clerks interview patients to obtain and process information required to provide hospital and medical services.
- Medical and dental receptionists greet patients, schedule appointments, receive and record payment for services, and direct patients to appropriate areas.
- Switchboard operators operate a telephone system or switchboard to answer, screen and forward telephone calls, taking messages and providing basic information as required.
- Answering service operators answer telephones and record and relay messages.

Employment requirements

- Completion of secondary school is usually required.
- On-the-job training may be provided.

Additional information

- Receptionists and switchboard operators may perform other clerical duties, such as sorting and distributing mail, typing and filing.

Classified elsewhere

- *Customer Service, Information and Related Clerks* (1453)
- *Hotel Front Desk Clerks* (6435)
- *Telephone Operators* (1424)
- Receptionist supervisors (in 1211 *Supervisors, General Office and Administrative Support Clerks*)

1421 Computer Operators

Computer Operators operate computer equipment, produce computer-generated reports, monitor the operation of computer systems and networks, and co-ordinate their use. They are employed in computer centres throughout the private and public sectors.

Examples of titles classified in this unit group

Computer Operator
Computer Tape Librarian
Junior Computer Operator
Magnetic Tape Operator
Master Console Operator
Network Controller
Network Operator
Peripheral Operator
System Operator

Main duties

Computer Operators perform some or all of the following duties:

- Operate computer equipment such as terminals, tape drives, disk drives and printers
- Operate master consoles to monitor the operation of computer systems and networks
- Load computer tapes and disks and install software and printer paper and forms
- Operate spreadsheet programs and other types of software to load and manipulate data and to produce reports
- Co-ordinate and schedule the use of computer terminals and networks
- Report computer malfunctions to computer maintenance technicians
- Distribute computer output to users.

Employment requirements

- Completion of secondary school is usually required.
- College or other courses in computer operation or network administration are usually required.

Additional information

- Progression to supervisory positions is possible with additional training and experience.

Classified elsewhere

- *Computer Programmers* (2163)
- *Data Entry Clerks* (1422)
- *Typists and Word Processor Operators* (1412)
- Desk-top publishing specialists (in 1423 *Typesetters and Related Occupations*)
- Supervisors of computer operators (in 1211 *Supervisors, General Office and Administrative Support Clerks*)

1422 Data Entry Clerks

Data Entry Clerks type at keyboards and data entry consoles to input coded, statistical and other information onto diskettes, disks or tapes for storage. They are employed in offices and computer centres throughout the private and public sectors.

Examples of titles classified in this unit group

Data Control Clerk
Data Entry Clerk
Data Entry Operator
Data Processor
Keypunch Operator
Payment Entry Clerk

Main duties

Data Entry Clerks perform some or all of the following duties:

- Receive and register invoices, forms, records and other documents for data capture
- Type at keyboards and data entry consoles to input source data onto diskettes, disks and tapes for storage
- Identify, label and store diskettes, disks and tapes
- Verify accuracy and completeness of data
- Maintain libraries of diskettes, disks and tapes.

Employment requirements

- Completion of secondary school may be required.
- College or other courses in data entry may be required.
- Ability to type or operate data entry equipment is usually required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Computer Operators* (1421)
- *General Office Clerks* (1411)
- *Supervisors, General Office and Administrative Support Clerks* (1211)
- *Typists and Word Processing Operators* (1412)

1423 Typesetters and Related Occupations

Typesetters operate keyboards to enter copy into a typesetting system or operate typesetting output equipment to produce text that is ready to print. They are employed by firms that specialize in typesetting, commercial printing companies, newspapers, magazines and in various establishments in the public and private sectors that have in-house printing departments. This unit group also includes markup persons and desktop publishing operators.

Examples of titles classified in this unit group

Compositor
Computer Typesetter
Copy Marker
Desktop Compositor
Desktop Publishing Operator
Markup Person
Phototypesetter
Typesetter
Typesetting Input Operator
Typesetting Output Operator
Typographer

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Desktop publishing operators operate desktop publishing software and equipment to design, lay out and produce camera-ready copy.
- Markup persons mark copy with computer codes and typographic instructions before it is typeset.
- Typesetting input operators input copy, codes or commands and subsequent corrections into typesetting device or system; operate media conversion equipment to process and format copy transmitted through telecommunications.
- Typesetting output operators operate and tend typesetting output devices, load and process photosensitive material and perform routine maintenance.

Employment requirements

- Completion of secondary school is required.
- Completion of a college program in graphic arts, or other training in typography, computer typesetting, or desktop publishing is usually required.
- Typing or data entry experience is required for typesetters.

Additional information

- Progression to supervisory positions is possible through experience.

Classified elsewhere

- *Graphic Designers and Illustrating Artists* (5241)
- Copy stylists, mechanical artists and paste-up artists (in 5223 *Graphic Arts Technicians*)
- Proofreaders (in 1452 *Correspondence, Publication and Related Clerks*)
- Typesetter supervisors (in 1211 *Supervisors, General Office and Administrative Support Clerks*)

1424 Telephone Operators

Telephone operators operate computerized or conventional telephone systems to advance and assist the completion of telephone calls. Telephone service observers assist, monitor and train telephone operators in the performance of their duties. They are employed by telephone companies.

Examples of titles classified in this unit group

Directory Assistance Operator
Telephone Operator
Telephone Service Assistant
Telephone Service Observer
Toll Operator

Main duties

Telephone operators perform some or all of the following duties:

- Operate telephone systems to advance and complete customers' telephone calls such as long distance, pay telephone, mobile radio/telephone, person-to-person and emergency calls
- Operate computerized directory listing systems or consult printed directories to provide directory assistance for customers
- Calculate billing charges and record billing information.

Telephone service observers perform some or all of the following duties:

- Develop and give telephone operator training courses
- Monitor the work of telephone operators to ensure calls are completed in an accurate and timely manner.

Employment requirements

- Completion of secondary school may be required.
- On-the-job training is provided.
- Experience as a telephone operator is usually required for telephone service observers.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Receptionists and Switchboard Operators* (1414)
- Supervisors of telephone operators (in 1211 *Supervisors, General Office and Administrative Support Clerks*)

1431 Accounting and Related Clerks

This unit group includes clerks who calculate, prepare and process bills, invoices, accounts payable and receivable, budgets and other routine financial records according to established procedures. They are employed throughout the private and public sectors.

Examples of titles classified in this unit group

Accounting Clerk
Accounts Payable Clerk
Accounts Receivable Clerk
Audit Clerk
Billing Clerk
Budget Clerk
Costing Clerk
Deposit Clerk
Finance Clerk
Freight-Rate Clerk
Invoice Clerk
Ledger Clerk
Tax Clerk
Tax Return Preparer

Main duties

Accounting and Related Clerks perform some or all of the following duties:

- Calculate, prepare and issue bills, invoices, account statements and other financial statements according to established procedures, using manual and computerized systems
- Process, verify and balance financial records and business transactions, such as accounts payable and receivable, and enter data into ledger or computerized system
- Compile budget data and documents based on estimated revenues and expenses and previous budgets
- Calculate costs of materials, overhead and other expenses based on estimates, quotations and price lists
- Perform related clerical duties, such as maintaining filing and record systems, completing reports and answering client enquiries.

Employment requirements

- Completion of secondary school is usually required.
- Completion of college or other courses in accounting, bookkeeping or computer operation may be required.

Additional information

- Progression to supervisory or skilled financial occupations, such as accounts payable supervisor or bookkeeper, is possible with additional training and experience.

Classified elsewhere

- *Banking, Insurance and Other Financial Clerks* (1434)
- *Bookkeepers* (1231)
- *Collectors* (1435)
- *Financial Auditors and Accountants* (1111)
- *Payroll Clerks* (1432)
- *Supervisors, Finance and Insurance Clerks* (1212)

1432 Payroll Clerks

Payroll Clerks collect, verify and process payroll information and determine pay and benefit entitlements for employees within a department, company or other establishment. They are employed by payroll administration companies and by establishments throughout the private and public sectors.

Examples of titles classified in this unit group

Benefits Officer
Pay Advisor
Pay and Benefits Administrator
Pay and Benefits Clerk
Pay Clerk
Payroll Clerk
Payroll Officer
Salary Administration Officer

Main duties

Payroll Clerks perform some or all of the following duties:

- Maintain records of employee attendance, leave and overtime to calculate pay and benefit entitlements, using manual or computerized systems
- Prepare and verify statements of earnings for employees, indicating gross and net salaries and deductions such as taxes, union dues and insurance and pension plans
- Complete, verify and process forms and documentation for administration of benefits such as pension plans and unemployment and medical insurance
- Provide information to employees on payroll matters, benefit plans and collective agreement provisions
- Compile statistical reports, statements and summaries related to pay and benefits accounts
- Prepare and balance period-end reports and reconcile issued payrolls to bank statements.

Employment requirements

- Completion of secondary school is usually required.
- Completion of college or other courses in accounting, bookkeeping or payroll administration
  or
  Experience as a financial clerk is usually required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Administrative Clerks* (1441)
- *Personnel and Recruitment Officers* (1223)
- *Personnel Clerks* (1442)
- Supervisors of payroll clerks (in 1212 *Supervisors, Finance and Insurance Clerks*)

1433 Tellers, Financial Services

Tellers in this unit group process customers' financial transactions and provide information on related banking products and services. They are employed by banks, trust companies, credit unions and similar financial institutions.

Examples of titles classified in this unit group

Bank Teller
Customer Service Representative, Financial Services
Foreign Exchange Teller
Senior Teller
Teller Trainee

Main duties

Tellers in this unit group perform some or all of the following duties:

- Process customer cash deposits and withdrawals, cheques, transfers, bills, credit card payments, money orders, certified cheques and other related banking transactions
- Obtain and process information required for the provision of services, such as opening accounts and savings plans and purchasing bonds
- Sell travellers' cheques, foreign currency and money orders
- Balance daily transactions using computer programs, calculators and adding machines
- Sort and file deposit slips and cheques
- Prepare customer statements and other correspondence for mailing
- Answer enquiries and resolve problems or discrepancies concerning customers' accounts.

Entry requirements

- Completion of secondary school is required.
- On-the-job training is provided.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Banking, Insurance and Other Financial Clerks* (1434)
- *Customer Service, Information and Related Clerks* (1453)
- Supervisors of tellers (in 1212 *Supervisors, Finance and Insurance Clerks*)

1434 Banking, Insurance and Other Financial Clerks

Banking, Insurance and Other Financial Clerks compile, process and maintain banking, insurance and other financial information. They are employed by banks, credit companies, private and public insurance establishments, investment firms and other financial establishments throughout the private and public sectors.

Examples of titles classified in this unit group

Actuarial Clerk
Bank Clerk
Benefit and Entitlement Clerk
Credit Clerk
Dental Claims Clerk
Dividend Clerk
Insurance Clerk
Ledger Control Clerk
Loan Clerk
Mortgage Clerk
Personal Lines Clerk
Premium Rater
Real Estate Clerk
Securities Clerk
Senior Claims Clerk

Main duties

Bank clerks perform some or all of the following duties:

- Compile records of deposits, withdrawals, loan and mortgage payments, cheques and purchase, sale and exchange of securities
- Process loan and mortgage applications, loan and mortgage payments, retirement savings plan applications, term deposits, drafts and money orders
- Verify and balance automatic teller machine transactions and ledger entries, calculate service charges and interest payments and notify customers regarding account discrepancies and captured bank cards
- Answer enquiries and provide information on banking products, policies and services
- May sell drafts, money orders, travellers' cheques and foreign currency, rent safety deposit boxes and open and close savings, chequing and other accounts.

Insurance clerks perform some or all of the following duties:

- Process enrolments, cancellations, claims transactions, policy changes and premium payments
- Review insurance applications and verify insurance coverage, premiums paid and other insurance information
- Calculate insurance premiums, pension benefits and annuity payments
- Compile and maintain claims data, rates and insurance data and records
- Answer enquiries and provide information on insurance products, policies and services.

Other financial clerks in this unit group perform some or all of the following duties:

- Compile and maintain rental, sale and other real estate listings
- Compile and maintain stock, bond and other securities listings
- Sort, verify and process real estate, securities and other financial transactions
- Answer enquiries and reply to correspondence.

Employment requirements

- Completion of secondary school is usually required.
- On-the-job training and short-term training courses or programs specific to the financial establishment are usually required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Bookkeepers* (1231)
- *Customer Service, Information and Related Clerks* (1453)
- *General Office Clerks* (1411)
- *Supervisors, Finance and Insurance Clerks* (1212)
- *Tellers, Financial Services* (1433)

1435 Collectors

Collectors collect payments on overdue accounts and bad cheques and locate debtors to make collection arrangements. They are employed by collection agencies, utility companies, department stores, loan companies, banks and credit unions, and by financial and licensing departments within governments.

Examples of titles classified in this unit group

Bill Collector
Collection Clerk
Collection Officer
Collections Investigation Officer
Collector
Credit and Collection Clerk
Locator
Skip Tracer

Main duties

Collectors perform some or all of the following duties:

- Notify debtors of overdue payments and accounts by telephone, mail, and registered mail, and continue the notification process if reply is not received
- Visit debtor to collect amount due or to make payment arrangements
- Recommend legal action or discontinuation of service in cases where payment is not forthcoming
- Trace and locate debtors, and may contact debtors' friends, neighbours, relatives and employers to obtain information
- Answer correspondence, prepare reports and maintain records and files related to collection work.

Employment requirements

- Completion of secondary school is usually required.
- A period of on-the-job training is usually provided.
- A collections licence issued by the province or territory of employment is usually required.

Additional information

- Progression to senior or supervisory positions is possible with experience.

Classified elsewhere

- Accounts receivable clerks (in 1431 *Accounting and Related Clerks*)
- Collections supervisors (in 1212 *Supervisors, Finance and Insurance Clerks*)
- Tax collection officers (in 1228 *Immigration, Unemployment Insurance and Revenue Officers*)

1441 Administrative Clerks

Administrative Clerks compile, verify, record and process forms and documents, such as applications, licences, permits, contracts, registrations and requisitions, in accordance with established procedures, guidelines and schedules. They are employed throughout the private and public sectors.

Examples of titles classified in this unit group

Administrative Clerk
Application Clerk
Authorization Clerk
By-law Clerk
Contract Clerk
Customs Clerk
Documentation Clerk
Import Clerk
Licence Clerk
Office Administration Clerk
Passport Clerk
Registration Clerk
Registry Clerk
Ward Clerk
Warranty Clerk

Main duties

Administrative Clerks perform some or all of the following duties:

- Compile, verify, record and process applications, licences, permits, contracts, registrations, requisitions and other forms and documents in accordance with established procedures and schedules, using manual and computerized processing systems
- Authorize and issue licences, permits, registration papers, reimbursements or other material after requesting documents have been processed and approved
- Maintain inventory of office supplies and order supplies as required
- Prepare routine reports and provide information to staff and general public regarding company and program rules, regulations and procedures
- Assist in the co-ordination of administrative procedures such as budget submissions, contracts administration and work schedules
- May organize and co-ordinate flow of work for general office clerks, clerk-typists and word processor operators.

Employment requirements

- Completion of secondary school is usually required.
- Completion of college or other courses in business administration is usually required.
- Ability to type or operate a computer may be required.
- Some clerical experience may be required.

Additional information

- Progression to supervisory positions is possible with experience.
- Progression to officer level positions is possible with additional training and experience.

Classified elsewhere

- *Administrative Officers* (1221)
- *Court clerks* (1443)
- *Executive Assistants* (1222)
- *General Office Clerks* (1411)
- *Personnel Clerks* (1442)
- *Supervisors, General Office and Administrative Support Clerks* (1211)

1442 Personnel Clerks

Personnel Clerks assist personnel officers and human resources specialists and compile, maintain and process information relating to staffing, recruitment, training, labour relations, performance evaluations and classifications. They are employed in personnel departments throughout the private and public sectors.

Examples of titles classified in this unit group

Classification Clerk
Employment Clerk
Human Resources Assistant
Human Resources Clerk
Labour Relations Clerk
Personnel Clerk
Staffing Clerk
Training Clerk

Main duties

Personnel Clerks perform some or all of the following duties:

- Process, verify and register documentation relating to personnel activities such as staffing, recruitment, training, grievances, performance evaluations and classifications
- Maintain and update manual and computerized filing and registration systems, and compile and prepare reports and documents relating to personnel activities
- Respond to telephone and written enquiries from staff and the general public regarding personnel matters
- Arrange for advertising or posting of job vacancies, assist in screening and rating of job applicants, and conduct basic reference checks
- Administer and score routine employment tests, such as typing and proofreading tests
- Arrange for in-house and external training activities.

Employment requirements

- Completion of secondary school is usually required.
- Completion of college or other courses in personnel administration may be required.
- Ability to type or operate a computer may be required.
- Some clerical experience may be required.

Additional information

- Progression to supervisory positions is possible with experience.
- Progression to officer level positions is possible with additional training and experience.

Classified elsewhere

- *Administrative Clerks* (1441)
- *Payroll Clerks* (1432)
- *Personnel and Recruitment Officers* (1223)
- *Specialists in Human Resources* (1121)
- *College and Other Vocational Instructors* (4131)

1443 Court Clerks

This unit group includes those who perform support functions in courts of law, such as calling court to order, preparing court dockets and maintaining exhibits. Court Clerks are employed by federal and provincial courts.

Examples of titles classified in this unit group

Court Clerk
Court Clerk/Crier
Judicial Clerk
Provincial Court Clerk

Main duties

Court Clerks perform some or all of the following duties:

- Call courts of law to order; read charges and take pleas from defendants; and perform other clerical functions in courtrooms
- Prepare court files, court dockets and other documents and exhibits
- Update and maintain court office indexes and files on actions taken by the court or in response to court decisions
- Receive, disburse and account for fines, fees and trust monies
- Assist the public in court offices.

Employment requirements

- Completion of secondary school is required.
- On-the-job training is provided.

Additional information

- Progression to supervisory or court officer positions is possible with experience.

Classified elsewhere

- *Court Officers and Justices of the Peace* (1227)
- *Court Recorders and Medical Transcriptionists* (1244)
- Court clerk supervisors (in 1227 *Court Officers and Justices of the Peace*)

1451 Library Clerks

Library Clerks issue and receive library materials, sort and shelve books and provide general library information to users. They also perform clerical functions such as filing, typing and word processing. Library Clerks are employed by libraries or other establishments with library services.

Examples of titles classified in this unit group

Circulation Clerk
Library Clerk
Library Page
Interlibrary Loan Clerk
Periodicals Clerk
Reference Clerk
Shelving Clerk – Library

Main duties

Library Clerks perform some or all of the following duties:

- Issue and receive library books and other materials
- Reshelve books and other library materials
- Perform clerical activities such as filing, typing and word processing
- Assist library users in accessing basic library materials and making interlibrary loans.

Employment requirements

- Completion of secondary school is usually required.

Classified elsewhere

- *Librarians* (5111)
- *Supervisors, Library, Correspondence and Related Information Clerks* (1213)
- Library technicians (in 5211 *Library and Archive Technicians and Assistants*)

1452 Correspondence, Publication and Related Clerks

Clerks in this unit group write routine correspondence, proofread material for accuracy, compile material for publication and perform other related clerical duties. They are employed by newspapers, periodicals, publishing firms and by establishments throughout the private and public sectors.

Examples of titles classified in this unit group

Advertising Clerk
Classified Advertising Clerk
Correspondence Clerk
Directory Compiler
Editing Clerk
Editorial Assistant
Press Clipper
Proofreader
Publication Clerk
Reader
Translation Clerk

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Classified advertising clerks receive customers' orders for classified advertising, write and edit copy, calculate advertising rates and bill customers.
- Correspondence clerks write routine business and government correspondence such as replies to requests for information and assistance, damage claims, credit and billing enquiries and service complaints.
- Editorial assistants and publication clerks assist in the preparation of periodicals, advertisements, catalogues, directories and other material for publication; proofread material; verify facts and conduct research.
- Proofreaders read material prior to publication to detect and mark for correction any grammatical, typographical or compositional errors.
- Readers and press clippers read newspapers, magazines, press releases and other publications to locate and file articles of interest to staff and clients.

Employment requirements

- Completion of secondary school is required.
- Additional courses in writing, journalism or a related field may be required.
- Previous clerical or administrative experience may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Professional Occupations in Public Relations and Communications* (5124)
- *Supervisors, Library, Correspondence and Related Information Clerks* (1213)

1453 Customer Service, Information and Related Clerks

This unit group includes clerks who answer enquiries and provide information regarding an establishment's goods, services and policies and who provide customer services such as receiving payments and processing requests for services. They are employed by retail establishments, insurance, telephone and utility companies and by other establishments throughout the private and public sectors.

Examples of titles classified in this unit group

Account Information Clerk
Bus Information Clerk
Complaint Clerk
Counter Enquiries Clerk
Courtesy Desk Clerk
Customer Service Clerk
Enquiries Clerk
Hospital Information Clerk
Information Clerk
Lost-and-Found Clerk
Public Relations Clerk
Tourist Information Clerk

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Customer service clerks in retail establishments answer enquiries from customers and investigate complaints regarding the establishment's goods, services and policies; arrange for refunds, exchange and credit for returned merchandise; receive account payments; and receive credit and employment applications.
- Customer service clerks in insurance, telephone, utility and similar companies explain the type and cost of services offered; obtain and process information required for the provision of services; arrange for billing; and receive payment for services.
- Information clerks provide information to customers and the public concerning goods, services, schedules, rates, regulations and policies in response to telephone and in-person enquiries.

Employment requirements

- Completion of secondary school is usually required.
- Clerical or sales experience may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Correspondence, Publication and Related Clerks* (1452)
- *Receptionists and Switchboard Operators* (1414)
- *Retail Salespersons and Sales Clerks* (6421)
- *Supervisors, Library, Correspondence and Related Information Clerks* (1213)
- Customer service representatives in banks and other financial institutions (in 1433 *Tellers, Financial Services*)
- General ticket and information clerks (airline) (in 6433 *Airline Sales and Service Agents*)
- Ticket and information clerks (except airline) (in 6434 *Ticket and Cargo Agents and Related Clerks (Except Airline)*)

1454 Survey Interviewers and Statistical Clerks

Survey interviewers contact individuals to gather information for market research, public opinion polls or election and census enumeration. Statistical clerks code and compile interview and other data into reports, lists, directories and other documents. Workers in this unit group are employed by market research and polling firms, government departments and agencies, utility companies and other establishments. This unit group also includes clerks who observe and record information on traffic flow and who take utility meter readings.

Examples of titles classified in this unit group

Census Enumerator
Coding Clerk
Election Enumerator
Interview Clerk
Poll Clerk
Public Opinion Collector
Statistical Clerk
Survey Interviewer
Telephone Survey Clerk

Main duties

Survey interviewers perform some or all of the following duties:

- Contact individuals by telephone or in person and explain the purpose of the interview
- Ask questions following the outlines of questionnaires and surveys
- Record responses on paper or enter responses directly into computer database through computer-assisted interviewing systems.

Statistical clerks perform some or all of the following duties:

- Check information gathered for completeness and accuracy
- Code information according to established coding manuals and enter data onto computers
- Conduct routine statistical analysis of data
- Compile interview and other data into reports and lists.

Employment requirements

- Completion of secondary school may be required.
- Experience in the operation of a computer may be required.
- On-the-job training is usually provided.

Classified elsewhere

- *Correspondence, Publication and Related Clerks* (1452)
- *Customer Service, Information and Related Clerks* (1453)
- Telemarketers (in 6623 *Other Elemental Sales Occupations*)

1461 Mail, Postal and Related Clerks

This unit group includes clerks who process and sort mail and parcels in post offices, mail processing plants and internal mail rooms, and clerks who serve customers and record transactions at sales counters and postal wickets. Mail, Postal and Related Clerks are employed by Canada Post Corporation, courier and parcel express services and establishments throughout the public and private sectors.

Examples of titles classified in this unit group

Bus Parcel Express Clerk
Express Mail Clerk
Mail Clerk
Mail Room Clerk
Mail Sorter
Postal Clerk
Postal Counter Clerk
Postal Wicket Clerk
Rail Express Clerk

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Postal clerks calculate and affix the correct postage on letters, parcels and registered mail and receive payment from customers; sell stamps, prepaid mail and courier envelopes and money orders; route mail to the proper delivery stream; sign or obtain signatures from recipients for registered or special delivery mail and keep records; answer inquiries and complete forms regarding change of address, theft or loss of mail; and record and balance daily transactions.
- Mail sorters sort mail according to destination; bundle, label, bag and route sorted mail to the proper delivery stream; and search directories to find the correct address for redirected mail.
- Mail room clerks sort incoming and outgoing mail according to destination; weigh, calculate and affix proper postage to outgoing mail; address and bundle outgoing mail according to mailing lists; and route mail to the proper delivery stream.

Employment requirements

- Some secondary school education is required.

Additional information

- Progression to supervisory positions is possible with additional training or experience.

Classified elsewhere

- *Couriers and Messengers* (1463)
- *Letter Carriers* (1462)
- *Supervisors, Mail and Message Distribution Occupations* (1214)

1462 Letter Carriers

Letter Carriers sort and deliver mail, record delivery of registered mail and collect money for cash-on-delivery parcels. Letter Carriers are employed by Canada Post Corporation.

Examples of titles classified in this unit group

Letter Carrier
Mail Carrier
Rural Mail Carrier

Main duties

Letter Carriers perform some or all of the following duties:

- Organize mail by address and load into mailbag
- Deliver letters, small parcels and other printed matter along established routes
- Deliver telegrams, special delivery and express mail
- Collect payment for cash-on-delivery service
- Record delivery of registered mail
- Leave notices that items could not be delivered and the location where they can be picked up
- Return undeliverable mail to postal station.

Employment requirements

- Some secondary school education is required.
- Two weeks to one month of training is provided by Canada Post Corporation.

Additional information

- Progression to supervisory positions is possible with additional training or experience.

Classified elsewhere

- *Couriers and Messengers* (1463)
- *Mail, Postal and Related Clerks* (1461)
- Letter carrier supervisors (in 1214 *Supervisors, Mail and Message Distribution Occupations*)

1463 Couriers and Messengers

Couriers and Messengers pick up and deliver letters, parcels, newspapers, flyers and other items within and between establishments. They are employed by courier service companies and other establishments throughout the private and public sectors.

Examples of titles classified in this unit group

Bank Messenger
Courier
Delivery Person, Courier Service
Flyer Distributor
Messenger
Newspaper Carrier
Runner

Main duties

Couriers and Messengers perform some or all of the following duties:

- Pick up messages, letters, envelopes, parcels, cheques, bonds, securities and other items from customers, and hand-deliver them to addressees within an establishment or in other establishments by walking, cycling or using a motor vehicle
- Collect payment for items delivered
- Keep record of items received and delivered
- Deliver newspapers, flyers, handbills, telephone directories and similar items to residences and businesses.

Employment requirements

- Some secondary school education is required.
- A valid driver's licence is required for some occupations in this unit group.
- Eligibility for bonding may be required.

Additional information

- There is some mobility into other delivery occupations such as delivery drivers.

Classified elsewhere

- *Delivery Drivers* (7414)
- *Letter Carriers* (1462)

1471 Shippers and Receivers

Shippers and Receivers ship, receive and record the movement of parts, supplies, materials, equipment and stock to and from an establishment. They are employed by retail and wholesale establishments, manufacturing companies, and other commercial and industrial establishments.

Examples of titles classified in this unit group

Freight Receiver
Freight Shipper
Import-Freight Clerk
Receiver
Shipper
Shipper/Receiver
Shipping Agent
Shipping and Receiving Clerk

Main duties

Shippers and Receivers perform some or all of the following duties:

- Determine method of shipment and prepare bills of lading, invoices and other shipping documents
- Assemble containers and crates, pack goods to be shipped and affix identifying information and shipping instructions
- Oversee loading and unloading of goods from trucks or other conveyances
- Inspect and verify incoming goods against invoices or other documents, record shortages and reject damaged goods
- Unpack and route goods to appropriate storage areas
- Maintain internal record-keeping systems
- May operate forklift, hand truck or other equipment to load, unload, transport and store goods.

Employment requirements

- Completion of secondary school is usually required.
- Experience in a related clerical occupation or as a warehouse worker may be required.

Additional information

- Progression to supervisory positions is possible with additional training or experience.

Classified elsewhere

- *Material Handlers* (7452)
- *Purchasing and Inventory Clerks* (1474)
- *Storekeepers and Parts Clerks* (1472)

1472 Storekeepers and Parts Clerks

Storekeepers and Parts Clerks sort, store and issue parts and supplies for use by the establishment in which they work and for sale to the public. They are employed by manufacturing companies, retail and wholesale establishments, mining, forestry and construction companies, repair shops, hospitals and other establishments and the armed forces.

Examples of titles classified in this unit group

Ammunition Storekeeper
Automotive Partsperson
Material Keeper
Medical Supply Clerk
Motor Vehicle Parts Clerk
Parts Clerk
Partsperson
Parts Supplier
Ship Storeman/woman
Storekeeper
Tool Room Attendant

Main duties

Storekeepers and Parts Clerks perform some or all of the following duties:

- Receive and sort incoming parts, supplies and materials
- Store items in an orderly and accessible manner in a warehouse, tool room, supply room or other area
- Process incoming requisitions and issue or distribute parts and supplies for internal usage
- Maintain records of amount, kind and location of parts and supplies on hand using manual or computerized inventory system
- Prepare requisition orders to replenish parts, supplies and materials
- Sell spare and replacement parts for motor vehicles, machinery and equipment in a retail setting
- Advise retail customers or internal users on appropriateness of parts, supplies or materials requested.

Parts clerks may specialize in a particular line of parts such as automotive parts, heating, ventilating and air conditioning parts or refrigeration parts.

Employment requirements

- Completion of secondary school may be required.
- Completion of specialized training in high school or a one-year college program for parts clerks may be required.
- In Manitoba, Alberta, the Northwest Territories, British Columbia and the Yukon, completion of a three to four-year automotive partsperson apprenticeship program may be required.
- For parts clerks, experience in a related clerical occupation or as a warehouse worker may be required.
- Interprovincial trade certification (Red Seal) is also available to qualified automotive partspersons.

Additional information

- Progression to supervisory positions is possible with additional training or experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Purchasing and Inventory Clerks* (1474)
- *Shippers and Receivers* (1471)
- Parts clerks supervisors (in 1215 *Supervisors, Recording, Distributing and Scheduling Occupations*)

1473 Production Clerks

Production Clerks co-ordinate and expedite the flow of work and materials within an establishment, prepare work and production schedules and monitor the progress of production and construction projects. Production Clerks are employed by manufacturing and construction companies, printing and publishing companies and other industrial establishments.

Examples of titles classified in this unit group

Expediter
Material Estimator
Production Clerk
Production Co-ordinator
Production Scheduler
Scheduling Clerk
Traffic Control Clerk

Main duties

Production Clerks perform some or all of the following duties:

- Compile detailed worksheets and specifications from customer's order
- Estimate type and quantity of materials and labour required for production, construction and other projects
- Consult with production supervisor to schedule production runs in a cost and time-efficient manner
- Meet regularly with other production clerks, warehouse, production and construction supervisors and purchasing and inventory clerks to co-ordinate activities between warehouses and production floors or construction sites
- Co-ordinate and monitor the movement of parts, supplies and materials within an establishment and ensure that supplies, materials and products are shipped and received on schedule
- Prepare and maintain various reports on the progress of work, materials used, rates of production and other production information, using manual or computerized systems.

Employment requirements

- Completion of secondary school is usually required.
- Previous clerical experience or experience as a production worker may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Purchasing and Inventory Clerks* (1474)
- *Shippers and Receivers* (1471)
- *Storekeepers and Parts Clerks* (1472)

1474 Purchasing and Inventory Clerks

Purchasing and Inventory Clerks process purchasing transactions and maintain inventories of materials, equipment and stock. They are employed by retail and wholesale establishments, manufacturing companies, government agencies and other establishments.

Examples of titles classified in this unit group

Inventory Clerk
Inventory Control Clerk
Procurement Clerk
Purchasing Assistant
Purchasing Clerk

Main duties

Purchasing clerks perform some or all of the following duties:

- Review requisition orders for accuracy and verify that materials, equipment and stock are not available from current inventories
- Obtain price quotations from catalogues and suppliers and prepare purchase orders
- Calculate cost of order and charge or forward invoice to appropriate account
- Process purchases within purchasing authority
- Contact suppliers to resolve shortages, missed deliveries and other problems
- Prepare and maintain purchasing files, reports and price lists.

Inventory clerks perform some or all of the following duties:

- Monitor inventory levels as materials, equipment and stock are issued, transferred within an establishment or sold to the public
- Compile inventory reports, recording the quantity, type and value of materials, equipment and stock on hand, using manual or computerized inventory systems
- Prepare requisition orders to replenish materials, equipment and stock
- Maintain stock rotation and dispose of and account for outdated stock
- Reconcile calculated inventories with physical counts.

Employment requirements

- Completion of secondary school is usually required.
- Courses in purchasing management may be required for purchasing clerks.
- Ability to operate a computerized inventory system may be required for inventory clerks.

Additional information

- The duties of purchasing and inventory clerks may overlap in some establishments.
- Progression to supervisory positions or more senior occupations such as purchasing agent or retail buyer is possible with additional training or experience.

Classified elsewhere

- *Purchasing Agents and Officers* (1225)
- *Retail and Wholesale Buyers* (6233)
- *Storekeepers and Parts Clerks* (1472)
- Supervisors of purchasing and inventory clerks (in 1215 *Supervisors, Recording, Distributing and Scheduling Occupations*)

1475 Dispatchers and Radio Operators

Dispatchers operate radios and other telecommunication equipment to dispatch emergency vehicles and to co-ordinate the activities of drivers and other personnel. They are employed by police, fire and health departments, other emergency service agencies, taxi, delivery and courier services, utility companies, and other commercial and industrial establishments. Radio operators receive, transmit and record signals and messages using radios and other telecommunication equipment. They are employed by transportation companies, mining, forestry and other industrial establishments, and by the armed forces.

Examples of titles classified in this unit group

911 Dispatcher
Alarm System Dispatcher
Ambulance Dispatcher
Computer-Aided Dispatch Clerk
Dispatcher
Emergency Vehicle Dispatcher
Mobile Equipment Dispatcher
Radio Officer
Radio Operator
Radio Operator – Military
Taxi Dispatcher
Tow-Truck Dispatcher
Utilities Maintenance Crew Dispatcher

Main duties

Dispatchers perform some or all of the following duties:

- Receive requests for emergency assistance or service and contact ambulances, police and fire departments, tow-trucks, and utility crews
- Process and transmit information and instructions to co-ordinate the activities of vehicle operators, crews and equipment using a variety of computer-aided communications and dispatching equipment
- Dispatch personnel according to written schedules and work orders, or as required by emergency situations
- Advise vehicle operators of traffic problems such as construction, accidents, congestion, weather conditions and other occurences
- Monitor personnel workloads and locations
- Maintain operator work records and ensure time sheets and payroll summaries are completed accurately
- Record mileage, fuel use, repairs and other expenses.

Radio Operators perform some or all of the following duties:

- Operate radio equipment to communicate with ships, aircraft, mining crews, offshore oil rigs, logging camps and other remote operations
- Operate and assist in the maintenance of fixed, air transportable, mobile and naval communications equipment in the Canadian Armed Forces.

Employment requirements

- Completion of secondary school is usually required for police and emergency dispatchers and may be required for other dispatchers.
- Police and emergency dispatchers are usually required to complete formal on-the-job training.
- Radio operators and police and emergency dispatchers usually require provincial radio operator's certificates.

Classified elsewhere

- *Air Traffic Control Occupations* (2272)
- *Railway and Marine Traffic Controllers* (2275)
- Supervisors of dispatchers (in 1215 *Supervisors, Recording, Distributing and Scheduling Occupations*)
- Public transit dispatchers (in 7222 *Supervisors, Motor Transport and Other Ground Transit Operators*)

1476 Transportation Route and Crew Schedulers

Transportation Route and Crew Schedulers prepare operational and crew schedules for transportation equipment and operating personnel. They are employed by municipal transit commissions, truck, delivery and courier services, railways, airlines and by other transportation establishments in both the private and public sectors.

Examples of titles classified in this unit group

Bus Scheduler
Crew Scheduler, Transportation
Flight Crew Scheduler
Schedule Analyst
Schedule Writer, Transportation
Train Scheduler
Transit Scheduler
Transportation Route Scheduler
Truck Scheduler

Main duties

Transportation Route and Crew Schedulers perform some or all of the following duties:

- Review schedule requisitions, passenger counts, running times, distances, personnel availability and other pertinent information to establish schedule parameters
- Design new or modify existing schedules using computer software or other methods
- Incorporate into route plan factors such as peak travel periods, holidays, special events and construction with emphasis on time and cost efficiency
- Assign personnel to equipment and routes and schedule work shifts
- Compile equipment and personnel records, including hours in service, distances, maintenance, repairs required and other data, to produce operating reports
- May prepare user guides and other public service information to ensure comprehension of and access to services.

Employment requirements

- Completion of secondary school is required.
- Several years of experience in appropriate transportation sector are usually required.

Additional information

- Progression to supervisory positions is possible with experience.
- Mobility between occupations in this group is limited due to the requirement of specific transportation sector experience.

Classified elsewhere

- Flight schedulers (in 0713 *Transportation Managers*)
- Production schedule clerks in manufacturing establishments (in 1473 *Production Clerks*)
- Scheduling technicians in manufacturing (in 2233 *Industrial Engineering and Manufacturing Technologists and Technicians*)
- Supervisors of transportation route and crew schedulers (in 1215 *Supervisors, Recording, Distributing and Scheduling Occupations*)

NATURAL AND APPLIED SCIENCES AND RELATED OCCUPATIONS

Major Group 21
PROFESSIONAL OCCUPATIONS IN NATURAL AND APPLIED SCIENCES

211 Physical Science Professionals

2111 Physicists and Astronomers
2112 Chemists
2113 Geologists, Geochemists and Geophysicists
2114 Meteorologists
2115 Other Professional Occupations in Physical Sciences

212 Life Science Professionals

2121 Biologists and Related Scientists
2122 Forestry Professionals
2123 Agricultural Representatives, Consultants and Specialists

213 Civil, Mechanical, Electrical and Chemical Engineers

2131 Civil Engineers
2132 Mechanical Engineers
2133 Electrical and Electronics Engineers
2134 Chemical Engineers

214 Other Engineers

2141 Industrial and Manufacturing Engineers
2142 Metallurgical and Materials Engineers
2143 Mining Engineers
2144 Geological Engineers
2145 Petroleum Engineers
2146 Aerospace Engineers
2147 Computer Engineers
2148 Other Professional Engineers, n.e.c.

215 Architects, Urban Planners and Land Surveyors

2151 Architects
2152 Landscape Architects
2153 Urban and Land Use Planners
2154 Land Surveyors

216 Mathematicians, Systems Analysts and Computer Programmers

2161 Mathematicians, Statisticians and Actuaries
2162 Computer Systems Analysts
2163 Computer Programmers

Major Group 22
TECHNICAL OCCUPATIONS RELATED TO NATURAL AND APPLIED SCIENCES

221 Technical Occupations in Physical Sciences

2211 Applied Chemical Technologists and Technicians
2212 Geological and Mineral Technologists and Technicians
2213 Meteorological Technicians

222 Technical Occupations in Life Sciences

2221 Biological Technologists and Technicians
2222 Agricultural and Fish Products Inspectors
2223 Forestry Technologists and Technicians
2224 Conservation and Fishery Officers
2225 Landscape and Horticultural Technicians and Specialists

223 Technical Occupations in Civil, Mechanical and Industrial Engineering[4]

2230 Civil Engineering Technologists and Technicians and Construction Estimators
2231 Civil Engineering Technologists and Technicians
2232 Mechanical Engineering Technologists and Technicians
2233 Industrial Engineering and Manufacturing Technologists and Technicians
2234 Construction Estimators

224 Technical Occupations in Electronics and Electrical Engineering

2241 Electrical and Electronics Engineering Technologists and Technicians
2242 Electronic Service Technicians (Household and Business Equipment)
2243 Industrial Instrument Technicians and Mechanics
2244 Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors

225 Technical Occupations in Architecture, Drafting, Surveying and Mapping

2251 Architectural Technologists and Technicians
2252 Industrial Designers
2253 Drafting Technologists and Technicians
2254 Survey Technologists and Technicians
2255 Mapping and Related Technologists and Technicians

226 Other Technical Inspectors and Regulatory Officers

2261 Nondestructive Testers and Inspectors
2262 Engineering Inspectors and Regulatory Officers
2263 Inspectors in Public and Environmental Health and Occupational Health and Safety
2264 Construction Inspectors

227 Transportation Officers and Controllers

2271 Air Pilots, Flight Engineers and Flying Instructors
2272 Air Traffic Control Occupations
2273 Deck Officers, Water Transport
2274 Engineer Officers, Water Transport
2275 Railway and Marine Traffic Controllers

[4] In data provided by Statistics Canada, unit groups 2231 and 2234 are combined to form *2230 Civil Engineering Technologists and Technicians and Construction Estimators.*

2111 Physicists and Astronomers

Physicists conduct theoretical and applied research to extend knowledge of natural phenomena and to develop new processes and devices in fields such as electronics, communications, power generation and distribution, aerodynamics, optics and lasers, remote sensing, and medicine and health. They are employed by electronic, electrical and aerospace manufacturing companies, telecommunications companies, power utilities, university and government research laboratories, hospitals and by a wide range of other processing, manufacturing, and research and consulting firms. Astronomers conduct observational and theoretical research to extend knowledge of the universe. They are employed by government and universities.

Examples of titles classified in this unit group

Acoustics Physicist
Aerodynamicist
Astronomer
Astrophysicist
Biophysicist
Cosmologist
Experimental Physicist
Health Physicist
Medical Physicist
Metrologist
Nuclear Physicist
Optics Physicist
Research Scientist, Aerospace
Research Scientist, Communications
Plasma Physicist
Research Scientist, Physics
Research Scientist, Electronics
Research Scientist, Remote Sensing
Solid State Physicist

Main duties

Physicists perform some or all of the following duties:

- Design and conduct research in experimental and theoretical physics
- Carry out analysis of research data and prepare research reports
- Participate as a member of a research or development team in the design and development of experimental, industrial or medical equipment, instrumentation and procedures.

Physicists may specialize in fields such as aeronomy and space; acoustics; atomic and molecular physics; biophysics; condensed matter or solid state physics; electromagnetics; fluids and aerodynamics; health physics; medical physics; metrology; optics and laser physics; nuclear physics; particle physics; and plasma physics.

Astronomers perform some or all of the following duties:

- Design and conduct observational surveys, conduct detailed analyses, and develop numerical models to extend knowledge of celestial bodies and radiation received from the component parts of the universe
- Develop or participate in the development of instrumentation and software for astronomical observation and analysis.

Astronomers may specialize in fields such as observational or optical astronomy, radio astronomy and astrophysics.

Employment requirements

- Physicists require a master's or doctorate degree in a field of physics, engineering physics, or in a related discipline.
- Astronomers require a master's or doctorate degree in astronomy or in a related discipline.

Additional information

- Mobility between specializations within physics and within astronomy is possible with experience.
- Physicists may work closely with and perform some of the duties of engineers.
- Mobility is possible to the fields of meteorology, geophysics and other fields of science.

Classified elsewhere

- Geophysicists and physical oceanographers (in 2113 *Geologists, Geochemists and Geophysicists*)
- Atmospheric physicists (in 2114 *Meteorologists*)

2112 Chemists

Chemists conduct research and analysis in support of industrial operations, product and process development, quality control, environmental control, medical diagnosis and treatment, biotechnology and other applications. They also conduct theoretical, experimental and applied research into basic chemical and biochemical processes to create or synthesize new products and processes. Chemists are employed in research, development and quality control laboratories; chemical, petrochemical and pharmaceutical industries; mineral, metal and pulp and paper industries as well as in a wide variety of manufacturing, utility, health, educational and government establishments.

Examples of titles classified in this unit group

Agricultural Chemist
Analytical Chemist
Biochemist
Chemist
Clinical Chemist
Coatings Chemist
Electrochemist
Environmental Chemist
Food Chemist
Inorganic Chemist
Nuclear Magnetic Resonance (NMR) Spectroscopist
Oceanographic Chemist
Organic Chemist
Organic Mass Spectrometrist
Organometallic Chemist
Pharmacological Chemist
Physical Chemist
Polymer Chemist
Quality Control Chemist
Research Chemist
Soil Chemist
Textile Chemist
Theoretical Chemist

Main duties

Chemists perform some or all of the following duties:

- Analyze, synthesize, purify, modify and characterize chemical or biochemical compounds
- Develop and conduct programs of analysis to ensure quality control of raw materials, chemical intermediates or final products
- Conduct programs of sample and data collection and analysis to identify and quantify environmental toxicants
- Conduct research to develop new chemical formulations and processes and devise new technical applications of industrial chemicals and compounds
- Conduct fundamental and applied research into the synthesis and properties of chemical compounds and the mechanisms of chemical reactions
- Investigate chemical aspects of the mechanism of drug action, the diagnosis and treatment of disease, organ function and the assessment of health
- Participate in interdisciplinary research and development projects working with chemical engineers, biologists, microbiologists, agronomists, geologists or other professionals
- Act as technical consultant in a particular field of expertise
- May supervise other chemists and chemical technicians and technologists.

Employment requirements

- A bachelor's degree in chemistry, biochemistry or in a related discipline is required.
- A master's or doctorate degree is usually required for employment as a research chemist.
- Licensing through the Ordre des chimistes du Québec and membership in the professional corporation for chemists is mandatory for chemists who work in Quebec.

Additional information

- Mobility between occupations in this group is possible with experience.
- Mobility is possible to occupations concerned with plant management, technical sales, and the development and management of regulatory programs and teaching professions.

Classified elsewhere

- *Chemical Engineers* (2134)
- Geochemists (in 2113 *Geologists, Geochemists and Geophysicists*)
- Metallurgists and material scientists (in 2115 *Other Professional Occupations in Physical Sciences*)
- Molecular Biologists (in 2121 *Biologists and Related Scientists*)

2123 Agricultural Representatives, Consultants and Specialists

Agricultural Representatives, Consultants and Specialists provide assistance and advice to farmers on all aspects of farm management, cultivation, fertilization, harvesting, soil erosion and composition, disease prevention, nutrition, crop rotation and marketing. They are employed by businesses, institutions and governments that assist the farming community or they may be self-employed.

Examples of titles classified in this unit group

Agricultural Consultant
Agricultural Extension Supervisor
Agricultural Livestock Specialist
Agricultural Representative
Agricultural Soil and Crop Specialist
Agriculturist
Agrologist
Agronomist
Consulting Agrologist
Crop Specialist
Farm Management Consultant
Farm Consultant
Field Service Agent
Grower's Advisor
Professional Agrologist (P.Ag.)

Main duties

Agricultural Representatives, Consultants and Specialists perform some or all of the following duties:

- Provide counselling and advisory services to farmers on crop cultivation and fertilization, harvesting, animal and poultry care, disease prevention, farm management, farm financing, marketing and other agricultural subjects
- Prepare and conduct advisory information sessions and lectures for farmers and other groups
- Conduct research, analyze agricultural data and prepare research reports
- Liaise with researchers, educators and government or business managers on matters pertaining to farming and agriculture
- Maintain records of services provided and the effects of advice given.

Agricultural representatives, consultants and specialists may specialize in specific aspects of agriculture such as animal science, field crops, horticulture, soil science, irrigation or drainage, farm management, marketing, agricultural economics, land use, environmental management, appraisal or extension and education.

Employment requirements

- A bachelor's or master's degree in agriculture or in a related science is required.
- Membership or eligibility for membership in a provincial institute of agrology is usually required.
- In Quebec, membership in the professional corporation for agrologists is mandatory.

Classified elsewhere

- *Biologists and Related Scientists* (2121)
- *Landscape and Horticultural Technicians and Specialists* (2225)
- Agricultural engineers (in 2148 *Other Professional Engineers, n.e.c.*)
- Agrology technologists and technicians (in 2221 *Biological Technologists and Technicians*)
- Managers of agricultural extension and consulting services (in 0212 *Architecture and Science Managers*)
- Managers responsible for agricultural economic policy (in 0412 *Government Managers in Economic Analysis, Policy Development and Program Administration*)

2112 Chemists

Chemists conduct research and analysis in support of industrial operations, product and process development, quality control, environmental control, medical diagnosis and treatment, biotechnology and other applications. They also conduct theoretical, experimental and applied research into basic chemical and biochemical processes to create or synthesize new products and processes. Chemists are employed in research, development and quality control laboratories; chemical, petrochemical and pharmaceutical industries; mineral, metal and pulp and paper industries as well as in a wide variety of manufacturing, utility, health, educational and government establishments.

Examples of titles classified in this unit group

Agricultural Chemist
Analytical Chemist
Biochemist
Chemist
Clinical Chemist
Coatings Chemist
Electrochemist
Environmental Chemist
Food Chemist
Inorganic Chemist
Nuclear Magnetic Resonance (NMR) Spectroscopist
Oceanographic Chemist
Organic Chemist
Organic Mass Spectrometrist
Organometallic Chemist
Pharmacological Chemist
Physical Chemist
Polymer Chemist
Quality Control Chemist
Research Chemist
Soil Chemist
Textile Chemist
Theoretical Chemist

Main duties

Chemists perform some or all of the following duties:

- Analyze, synthesize, purify, modify and characterize chemical or biochemical compounds
- Develop and conduct programs of analysis to ensure quality control of raw materials, chemical intermediates or final products
- Conduct programs of sample and data collection and analysis to identify and quantify environmental toxicants
- Conduct research to develop new chemical formulations and processes and devise new technical applications of industrial chemicals and compounds
- Conduct fundamental and applied research into the synthesis and properties of chemical compounds and the mechanisms of chemical reactions
- Investigate chemical aspects of the mechanism of drug action, the diagnosis and treatment of disease, organ function and the assessment of health
- Participate in interdisciplinary research and development projects working with chemical engineers, biologists, microbiologists, agronomists, geologists or other professionals
- Act as technical consultant in a particular field of expertise
- May supervise other chemists and chemical technicians and technologists.

Employment requirements

- A bachelor's degree in chemistry, biochemistry or in a related discipline is required.
- A master's or doctorate degree is usually required for employment as a research chemist.
- Licensing through the Ordre des chimistes du Québec and membership in the professional corporation for chemists is mandatory for chemists who work in Quebec.

Additional information

- Mobility between occupations in this group is possible with experience.
- Mobility is possible to occupations concerned with plant management, technical sales, and the development and management of regulatory programs and teaching professions.

Classified elsewhere

- *Chemical Engineers* (2134)
- Geochemists (in 2113 *Geologists, Geochemists and Geophysicists*)
- Metallurgists and material scientists (in 2115 *Other Professional Occupations in Physical Sciences*)
- Molecular Biologists (in 2121 *Biologists and Related Scientists*)

2123 Agricultural Representatives, Consultants and Specialists

Agricultural Representatives, Consultants and Specialists provide assistance and advice to farmers on all aspects of farm management, cultivation, fertilization, harvesting, soil erosion and composition, disease prevention, nutrition, crop rotation and marketing. They are employed by businesses, institutions and governments that assist the farming community or they may be self-employed.

Examples of titles classified in this unit group

Agricultural Consultant
Agricultural Extension Supervisor
Agricultural Livestock Specialist
Agricultural Representative
Agricultural Soil and Crop Specialist
Agriculturist
Agrologist
Agronomist
Consulting Agrologist
Crop Specialist
Farm Management Consultant
Farm Consultant
Field Service Agent
Grower's Advisor
Professional Agrologist (P.Ag.)

Main duties

Agricultural Representatives, Consultants and Specialists perform some or all of the following duties:

- Provide counselling and advisory services to farmers on crop cultivation and fertilization, harvesting, animal and poultry care, disease prevention, farm management, farm financing, marketing and other agricultural subjects
- Prepare and conduct advisory information sessions and lectures for farmers and other groups
- Conduct research, analyze agricultural data and prepare research reports
- Liaise with researchers, educators and government or business managers on matters pertaining to farming and agriculture
- Maintain records of services provided and the effects of advice given.

Agricultural representatives, consultants and specialists may specialize in specific aspects of agriculture such as animal science, field crops, horticulture, soil science, irrigation or drainage, farm management, marketing, agricultural economics, land use, environmental management, appraisal or extension and education.

Employment requirements

- A bachelor's or master's degree in agriculture or in a related science is required.
- Membership or eligibility for membership in a provincial institute of agrology is usually required.
- In Quebec, membership in the professional corporation for agrologists is mandatory.

Classified elsewhere

- *Biologists and Related Scientists* (2121)
- *Landscape and Horticultural Technicians and Specialists* (2225)
- Agricultural engineers (in 2148 *Other Professional Engineers, n.e.c.*)
- Agrology technologists and technicians (in 2221 *Biological Technologists and Technicians*)
- Managers of agricultural extension and consulting services (in 0212 *Architecture and Science Managers*)
- Managers responsible for agricultural economic policy (in 0412 *Government Managers in Economic Analysis, Policy Development and Program Administration*)

2131 Civil Engineers

Civil Engineers plan, design, develop and manage projects for the construction or repair of various structures such as buildings, roads, airports, railways, rapid transit facilities, bridges, dams, ports and coastal installations and systems related to highway and transportation services, water distribution and sanitation. Civil Engineers may also specialize in foundation analysis, building and structural inspection, surveying and municipal planning. Civil Engineers are employed by engineering consulting companies, municipal and other levels of government, and in many other industries, or they may be self-employed.

Examples of titles classified in this unit group

Bridge Engineer
Civil Engineer
Construction Engineer
Environmental Engineer
Highway Engineer
Hydraulic Engineer
Municipal Engineer
Project Engineer, Construction
Public Works Engineer
Sanitation Engineer
Structural Engineer
Surveying Engineer
Traffic Engineer
Transportation Engineer
Water Management Engineer

Main duties

Civil Engineers perform some or all of the following duties:

- Confer with clients and other members of the engineering team and conduct research to determine project requirements
- Plan and design major civil projects such as buildings, roads, bridges, dams, water and waste management systems and structural steel fabrications
- Develop construction specifications and procedures
- Evaluate and recommend appropriate building and construction materials
- Interpret, review and approve survey and civil design work
- Conduct field services for civil works
- Ensure construction plans meet guidelines and specifications of building codes and other regulations
- Establish and monitor construction work schedules
- Conduct feasibility studies, economic analyses, municipal and regional traffic studies, environmental impact studies or other investigations
- Conduct technical analyses of survey and field data for development of topographic, soil, hydrological or other information and prepare reports
- Act as project or site supervisor for land survey or construction work
- Prepare contract documents and review and evaluate tenders for construction projects
- Supervise technicians, technologists and other engineers and review and approve designs, calculations and cost estimates.

Employment requirements

- A bachelor's degree in civil engineering or in an appropriate related engineering discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as a civil engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- There is considerable mobility between civil engineering specializations at the less senior levels.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, urban planning, sales, marketing or management.

Classified elsewhere

- *Engineering Managers* (0211)
- *Geological Engineers* (2144)
- Chemical environmental engineers (in 2134 *Chemical Engineers*)

2132 Mechanical Engineers

Mechanical Engineers research, design and develop machinery and systems for heating, ventilating and air-conditioning, power generation, transportation, processing and manufacturing. They also perform duties related to the evaluation, installation, operation and maintenance of mechanical systems. Mechanical Engineers are employed by consulting firms, power generating utilities, and in a wide range of manufacturing, processing and transportation industries, or they may be self-employed.

Examples of titles classified in this unit group

Acoustics Engineer
Automotive Engineer
Design Engineer, Mechanical
Energy Conservation Engineer
Engineer, Power Generation
Fluid Mechanics Engineer
Heating Engineer
HVAC Engineer
Mechanical Engineer
Mechanical Maintenance Engineer
Nuclear Engineer
Piping Engineer
Refrigeration Engineer
Thermal Design Engineer
Tool Engineer

Main duties

Mechanical Engineers perform some or all of the following duties:

- Conduct research into the feasibility, design, operation and performance of mechanisms, components and systems
- Prepare material, cost and timing estimates, reports and design specifications for machinery and systems
- Design power plants, machines, components, tools, fixtures and equipment
- Supervise and inspect the installation, modification and commissioning of mechanical systems at construction sites or in industrial facilities
- Develop maintenance standards, schedules and programs and provide guidance to industrial maintenance crews
- Investigate mechanical failures or unexpected maintenance problems
- Prepare contract documents and evaluate tenders for industrial construction or maintenance
- Supervise technicians, technologists and other engineers and review and approve designs, calculations and cost estimates.

Employment requirements

- A bachelor's degree in mechanical engineering or in an appropriate related engineering discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as a mechanical engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- There is considerable mobility between mechanical engineering specializations at the less senior levels.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, sales, marketing or management.
- Mechanical engineers work closely with civil, electrical, aerospace, chemical, industrial and other engineers and mobility is possible between some fields of specialization in these disciplines.

Classified elsewhere

- Marine engineering officers (in 2274 *Engineer Officers, Water Transport*)
- Power engineers or stationary engineers (in 7351 *Stationary Engineers and Auxiliary Equipment Operators*)

2133 Electrical and Electronics Engineers

Electrical and Electronics Engineers design, plan, research, evaluate and test electrical and electronic equipment and systems. They are employed by electrical utilities, communications companies, manufacturers of electrical and electronic equipment, consulting firms, and by a wide range of manufacturing, processing and transportation industries and government.

Examples of titles classified in this unit group

Avionics Engineer
Communications Engineer
Control Systems Engineer
Design Engineer, Electrical
Distribution Planning Engineer, Electrical
Electrical Engineer
Electronics Engineer
Instrumentation and Control Engineer
Microwave Systems Engineer
Network Engineer, Electrical
Planning Engineer, Electrical Systems
Process Control Engineer, Electrical
Radio Systems Engineer
Roadway Lighting Design Engineer
Telecommunications Engineer
Television Systems Engineer
Test Engineer, Electronics
Transmission Planning Engineer

Main duties

Electrical and Electronics Engineers perform some or all of the following duties:

- Conduct research into the feasibility, design, operation and performance of electrical generation and distribution networks, electrical machinery and components and electronic communications, instrumentation and control systems, equipment, and components
- Prepare material cost and timing estimates, reports and design specifications for electrical and electronic systems and equipment
- Design electrical and electronic circuits, components, systems and equipment
- Supervise and inspect the installation, modification, testing and operation of electrical and electronic systems and equipment
- Develop maintenance and operating standards for electrical and electronic systems and equipment
- Investigate electrical or electronic failures
- Develop specialized applications and system software
- Prepare contract documents and evaluate tenders for construction or maintenance
- Supervise technicians, technologists, programmers, analysts and other engineers.

Electrical and electronics engineers may specialize in a number of areas including electrical design for residential, commercial or industrial installations, electrical power generation and transmission, communications systems and instrumentation and control systems.

Employment requirements

- A bachelor's degree in electrical or electronics engineering or in an appropriate related engineering discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as an electrical or electronics engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- Specialization in electronics engineering fields may occur either in educational programs or in the workplace.
- There is considerable mobility among electrical and electronics engineering specializations at the less senior levels.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, sales, marketing or management.

Classified elsewhere

- *Computer Engineers* (2147)
- *Computer Systems Analysts* (2162)
- Aerospace systems engineers (in 2146 *Aerospace Engineers*)

2134 Chemical Engineers

Chemical Engineers research, design, and develop chemical processes and equipment, oversee the operation and maintenance of industrial chemical, plastics, pharmaceutical, resource, pulp, and food processing plants and perform duties related to chemical quality control, environmental protection and biochemical or biotechnical engineering. Chemical Engineers are employed in a wide range of manufacturing and processing industries, consulting firms, government, research and educational institutions.

Examples of titles classified in this unit group

Adhesives Engineer
Biochemical Engineer
Biotechnical Engineer
Chemical Engineer, Environmental
Chemical Process Engineer
Engineer, Chemical
Industrial Hygiene Engineer
Industrial Waste Treatment Engineer
Liquid Fuels Engineer
Petrochemical Engineer
Polymer Engineer
Process Control Engineer, Chemical
Process Engineer
Project Engineer, Chemical
Refinery Engineer
Waste Treatment Engineer

Main duties

Chemical Engineers perform some or all of the following duties:

- Conduct economic and technical feasibility studies in areas related to chemical, petroleum, pulp and paper, food or other processing industries
- Conduct research into the development or improvement of chemical engineering processes, reactions and materials
- Evaluate chemical process technology and equipment and determine production specifications
- Design and test chemical processing and associated plants and equipment
- Oversee the construction, modification, operation and maintenance of pilot plants, processing units or processing plants
- Establish and conduct quality control programs, operating procedures and control strategies to ensure consistency and adherence to standards for raw materials, products and waste products or emissions
- Prepare contract documents and evaluate tenders for the process aspects of industrial construction
- Supervise technicians, technologists and other engineers
- May work in an administrative capacity, for example, in the development of guidelines and specifications for the handling of dangerous chemicals, environmental protection, or standards for foods, materials and consumer goods.

Chemical engineers may specialize in the products and processes of a particular industry, such as pulp and paper manufacturing, petroleum refining, energy processing, plastics, metal extraction and refining or adhesives and coatings production. They may also specialize in areas that are in various industries, such as process control, pollution control or fermentation processes.

Employment requirements

- A bachelor's degree in chemical engineering or in an appropriate related engineering discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as a chemical engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- There is considerable mobility between chemical engineering specializations at the less senior levels.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, sales, marketing or management.
- Chemical engineers work closely with chemists and other scientists and engineers and mobility is possible between some fields of specialization.

Classified elsewhere

- *Chemists* (2112)
- *Metallurgical and Materials Engineers* (2142)
- *Petroleum Engineers* (2145)
- Civil environmental engineers (in 2131 *Civil Engineers*)
- Food processing engineers (in 2148 *Other Professional Engineers, n.e.c.*)
- Biomedical engineers (in 2148 *Other Professional Engineers, n.e.c.*)
- Process control engineers with electrical or electronic specialization (in 2133 *Electrical and Electronics Engineers*)

2141 Industrial and Manufacturing Engineers

Industrial and Manufacturing Engineers conduct studies and develop and supervise programs to achieve efficient industrial production and efficient utilization of industrial human resources, machinery and materials. Industrial and Manufacturing Engineers are employed in consulting firms, manufacturing and processing companies and in government, financial, health care and other institutions.

Examples of titles classified in this unit group

Cost Engineer
Engineer, Computer Integrated Manufacturing
Fire Prevention Engineer
Industrial Engineer
Manufacturing Engineer
Methods Engineer
Plant Engineer
Production Engineer
Quality Control Engineer
Safety Engineer
Time-Study Engineer
Work Measurement Engineer

Main duties

Industrial and Manufacturing Engineers perform some or all of the following duties:

- Plan and design plant layouts and facilities
- Study new machinery and facilities and recommend or select efficient combinations
- Develop flexible or integrated manufacturing systems and procedures
- Conduct studies and implement program to determine optimum inventory levels for production and to allow optimum utilization of machinery, materials and resources
- Analyze costs of production
- Design, develop and conduct time studies and work simplification programs
- Determine human resource and skill requirements and develop training programs
- Develop performance standards, evaluation systems and wage and incentive programs
- Conduct studies of the reliability and performance of plant facilities, and production or administrative systems
- Establish programs and conduct studies to enhance industrial health and safety or to identify and correct fire and other hazards
- Valuate or assess industrial facilities
- Supervise technicians, technologists, analysts, administrative staff and other engineers.

Employment requirements

- A bachelor's degree in industrial engineering or in an appropriate related engineering discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- There is considerable mobility between industrial engineering specializations at the less senior levels.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, administration or management.

Classified elsewhere

- Organizational analysts (in 1122 *Professional Occupations in Business Services to Management*)
- Software engineers (in 2147 *Computer Engineers*)

2142 Metallurgical and Materials Engineers

Metallurgical and Materials Engineers conduct studies of the properties and characteristics of metals and other non-metallic materials and plan, design and develop machinery and processes to concentrate, extract, refine and process metals, alloys and other materials such as ceramics, semiconductors and composite materials. Metallurgical and Materials Engineers are employed in consulting engineering firms, mining, metal processing and manufacturing companies, and in government, research and educational institutions.

Examples of titles classified in this unit group

Ceramics Engineer
Corrosion Engineer
Electrometallurgical Engineer
Extractive Metallurgist
Foundry Engineer
Hydrometallurgical Engineer
Hydrometallurgist
Materials Engineer
Metallurgical Engineer
Physical Metallurgical Engineer
Pyrometallurgical Engineer
Pyrometallurgist

Main duties

Metallurgical and Materials Engineers perform some or all of the following duties:

- Conduct studies and design, develop and specify the processes, and machinery to concentrate, extract, refine and process metals from ores
- Conduct studies on the properties and characteristics of materials and design, develop and specify processes for moulding, shaping, forming and thermal treatment of metals, alloys and metallic systems, ceramics, semiconducting and other materials
- Conduct chemical and physical analytical studies, failure analyses and other studies and recommend material selection, design of materials, corrosion control measures, operational testing and other procedures
- Co-ordinate production testing and control of metal refining, smelting or foundry operations or non-metallic materials production operations
- Supervise technologists, technicians and other engineers and scientists.

Employment requirements

- A bachelor's degree in metallurgical, materials, ceramic or chemical engineering or in an appropriate related engineering discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as a metallurgical or materials engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- There is considerable mobility between engineering specializations at the less senior levels.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, sales, marketing or management.
- Metallurgical and materials engineers work closely with other engineers and scientists and mobility is possible between some fields of specialization.

Classified elsewhere

- *Chemical Engineers* (2134)
- *Chemists* (2112)
- *Mining Engineers* (2143)
- Physical metallurgists and materials scientists (in 2115 *Other Professional Occupations in Physical Sciences*)

2143 Mining Engineers

Mining Engineers plan and design the development of mines, mine facilities, systems and equipment, and plan, organize and supervise the extraction of metallic or non-metallic minerals and ores from underground or surface mines. Mining Engineers are employed by mining companies, consulting engineering companies, manufacturers, governments and in educational and research institutions.

Examples of titles classified in this unit group

Mine Design Engineer
Mine Development Engineer
Mine Layout Engineer
Mine Production Engineer
Mine Safety Engineer
Mine Ventilation Engineer
Mineral Engineer
Mining Engineer

Main duties

Mining Engineers perform some or all of the following duties:

- Conduct preliminary surveys and studies of ore, mineral or coal deposits to assess the economic and environmental feasibility of potential mining operations
- Determine the appropriate means of safely and efficiently mining deposits
- Determine and advise on appropriate drilling and blasting methods for mining, construction or demolition
- Design shafts, ventilation systems, mine services, haulage systems and supporting structures
- Design, develop and implement computer applications such as for mine design, mine modelling, mapping or for monitoring mine conditions
- Plan and design or select mining equipment and machinery and mineral treatment machinery and equipment in collaboration with other engineering specialists
- Plan, organize and supervise the development of mines and mine structures and the operation and maintenance of mines
- Prepare operations and project estimates, schedules and reports
- Implement and co-ordinate mine safety programs
- Supervise and co-ordinate the work of technicians, technologists, survey personnel, and other engineers and scientists.

Employment requirements

- A bachelor's degree in mining engineering or in an appropriate related engineering discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as a mining engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

2146 Aerospace Engineers

Aerospace Engineers research, design and develop aircraft, spacecraft, missiles, aerospace systems and their components and perform duties related to the testing, evaluation, installation, operation and maintenance of aerospace vehicles and systems. Aerospace Engineers are employed by aircraft and spacecraft manufacturers, air transport carriers and in government, and educational and research institutions.

Examples of titles classified in this unit group

Aerodynamics Engineer
Aeronautical Engineer
Aerospace Engineer
Aircraft Design Engineer
Stress Engineer, Aerospace
Structural Engineer, Aerospace
Systems Engineer, Aerospace
Test Engineer, Aerospace

Main duties

Aerospace Engineers perform some or all of the following duties:

- Design and develop aerospace vehicles, systems and components
- Develop and conduct computer simulations of aerospace vehicles, systems and components
- Prepare specifications for materials and processes to be used in aerospace manufacturing, maintenance, repair or modification
- Supervise and co-ordinate the manufacturing, assembly modification, repair and overhaul of aircraft and spacecraft
- Co-ordinate ground and flight tests of air and spacecraft
- Develop operational specifications, maintenance schedules and manuals for operators
- Develop the technical phases of logistical and operational support for aerospace vehicles and systems
- Investigate and report on structural or other component or system failures, accidents or incidents and prepare recommendations for corrective action.

Employment requirements

- A bachelor's degree in aerospace engineering or in an appropriate related engineering discipline, such as mechanical engineering or engineering physics, is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as an aerospace engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

2144 Geological Engineers

Geological Engineers conduct studies to analyze geological and geotechnical conditions for civil engineering, mining and oil and gas projects and plan, design, develop and supervise programs of geological data acquisition and analysis and the preparation of geological engineering reports and recommendations. Geological Engineers are employed in consulting engineering companies, electrical utilities, mining and petroleum companies and in government and research and educational institutions.

Examples of titles classified in this unit group

Engineering Geologist
Geological Engineer
Geophysical Engineer
Hydrogeological Engineer

Main duties

Geological Engineers perform some or all of the following duties:

- Plan, develop and co-ordinate programs of geotechnical, geological, geophysical or geohydrological data acquisition, analysis and mapping to assist in the development of civil engineering, mining, petroleum and waste management projects or for regional development
- Analyze and prepare recommendations and reports for construction or improvements to foundations of civil engineering projects such as rock excavation, pressure grouting, rock slope stabilization and hydraulic channel erosion control
- Conduct theoretical and applied study of groundwater flow and contamination and develop prescriptions for site selection, treatment and construction
- Plan, develop, co-ordinate and conduct theoretical and experimental studies in mining exploration, mine evaluation and feasibility studies relative to the mining industry
- Conduct surveys and studies of ore deposits, ore reserve calculations and mine design
- Design, develop and implement computer applications for geophysics, geochemistry, geology, mapping and related fields
- Supervise technologists, technicians and other engineers and scientists.

Employment requirements

- A bachelor's degree in geological engineering or in an appropriate related discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as a geological engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- There is considerable mobility between engineering specializations at the less senior levels.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, sales, marketing or management.
- Geological engineers work closely with geologists, and other scientists and engineers and mobility is possible between some fields of specialization.

Classified elsewhere

- *Geologists, Geochemists and Geophysicists* (2113)

2145 Petroleum Engineers

Petroleum Engineers conduct studies related to the exploration, development and extraction of oil and gas deposits; plan, design, develop and supervise projects for the drilling, completion, testing and re-working of oil and gas wells; and, conduct analyses of oil and gas reserves and production potential. Petroleum Engineers are employed by petroleum producing companies, consulting companies, well logging or testing companies and in governments and research and educational institutions.

Examples of titles classified in this unit group

Drilling Engineer, Oil and Gas
Petroleum Engineer
Petroleum Engineer, Completion
Production Engineer, Oil and Gas
Reservoir Engineer, Petroleum
Subsea Engineer

Main duties

Petroleum Engineers perform some or all of the following duties:

- Direct and monitor oil and gas drilling operations
- Develop drilling programs, select sites and specify drilling fluids, bit selection, drill stem testing procedures and equipment
- Direct and monitor the completion and evaluation of wells, well testing and well surveys
- Design and select artificial lift machinery, and well and surface production equipment and systems and specify programs for corrosion control and oil or gas treatment
- Develop specifications for and monitor and supervise well modification and stimulation programs to maximize oil and gas recovery
- Analyze reservoir rock and fluid data to design optimum recovery methods and to predict reservoir performance and reserves
- Monitor oil and gas reservoir performance and conduct technical and economic analyses to recommend improved production methods
- Design, develop and co-ordinate the installation maintenance and operation of subsea well-head and production equipment.

Petroleum engineers may specialize in drilling, production, reservoir analysis or subsea operations.

Employment requirements

- A bachelor's degree in petroleum engineering or in an appropriate related engineering discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as a petroleum engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- There is considerable mobility between aerospace engineering specializations at the less senior levels.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, sales, marketing or management.
- Aerospace engineers work closely with other scientists and engineers and mobility is possible between some fields of specialization.

Classified elsewhere

- Aircraft maintenance engineers (AME's) (in 7315 *Aircraft Mechanics and Aircraft Inspectors*)
- Aircraft maintenance engineers, avionics (in 2244 *Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors*)

2147 Computer Engineers

Computer Engineers research, plan, design, develop and test computers and related equipment, and design and develop software for engineering and industrial applications. Computer hardware engineers are employed by computer manufacturers, by a range of industries and by government, educational and research institutions. Software engineers are employed by companies which manufacture and market software products; by companies which devise embedded software for inclusion in other products, such as computers, telecommunications equipment and networks, aerospace products and instrumentation and control products; by consulting companies providing software-related information technology services; and by government, educational and research institutions.

Examples of titles classified in this unit group

Computer Applications Engineer
Computer Engineer
Computer Hardware Engineer
Computer Software Engineer
Computer Systems Engineer
Hardware Engineer
Software Engineer
Systems Design Engineer
Systems Engineer

Main duties

Computer hardware engineers perform some or all of the following duties:

- Plan, design and coordinate the development of computers and related equipment
- Supervise and inspect the installation, modification and testing of computers and related equipment
- Supervise drafters, technicians, technologists and other engineers.

Software engineers perform some or all of the following duties:

- Analyze the requirements for the application of computer technology in real-time environments for process or machine control, instrumentation, robotics, telecommunications, environmental monitoring, remote sensing, medical and related engineering, scientific and industrial applications
- Design and develop or co-ordinate the development, testing and implementation of computer languages and computer software packages
- Supervise the work of programmers, technologists and technicians and other engineering and scientific personnel.

Employment requirements

- Computer hardware engineers require a bachelor's degree in computer engineering, electrical or electronics engineering or engineering physics.
- Software engineers require a bachelor's degree in computer engineering, electrical or electronics engineering, engineering physics, computer science, physics or mathematics.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is sometimes required for employment and to practice as a computer engineer.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- There is considerable mobility between engineering specializations at the less senior levels.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, sales, marketing or management.
- Computer engineers work closely with computer programmers, systems analysts, electrical and electronics engineers and other scientists and engineers and mobility is possible between these fields of specialization.
- With experience, progression is possible to engineering management, marketing or sales.

Classified elsewhere

- *Computer Programmers* (2163)
- *Computer Systems Analysts* (2162)
- *Electrical and Electronics Engineers* (2133)
- *Engineering Managers* (0211)
- *Technical Sales Specialists, Wholesale Trade* (6221)

2148 Other Professional Engineers, n.e.c.

This unit group includes agricultural engineers, biomedical engineers, engineering physicists and engineering scientists, food processing engineers, marine and naval engineers, textile engineers and other specialized engineering occupations which are not classified elsewhere.

Examples of titles classified in this unit group

Agricultural Engineer
Biomedical Engineer
Clinical Engineer
Engineering Physicist
Engineering Scientist
Food Processing Engineer
Marine Engineer
Naval Architect
Naval Engineer
Textile Engineer

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Agricultural engineers study and advise on engineering problems related to agriculture and design agricultural machinery, structures, equipment and systems.
- Biomedical engineers design and develop medical diagnostic and clinical instrumentation, equipment and procedures; develop devices to assist the disabled; advise hospital administrators on planning, acquisition and use of medical equipment; and modify and install or supervise installation of equipment.
- Engineering physicists and engineering scientists conduct research and develop processes, programs and equipment to expand fundamental knowledge in the applied sciences and engineering and to support advanced engineering and scientific applications.
- Food processing engineers design and develop processes, equipment and procedures for the processing, storage, packaging and handling of food products.
- Marine and naval engineers design and develop marine vessels and floating structures, and associated marine power plants, propulsion systems and related systems and equipment and oversee the building, maintenance and repair of vessels and marine systems.
- Textile engineers design and develop processes, equipment and procedures for the production of fibres, yarns and textiles.

Employment requirements

- A bachelor's degree in an appropriate engineering discipline is required.
- Registration as a Professional Engineer (P.Eng.) by a provincial or territorial association of professional engineers is often required for employment and to practice as an engineer.
- Engineers are eligible for registration following graduation from an accredited educational program and after at least two years of supervised work experience in engineering and, in some provinces, after passing a professional practice examination.
- In some provinces, those who are not graduates of an accredited educational program are eligible for registration after completing a six to eight-year term of supervised employment and successfully passing examinations.
- In Quebec, membership in the professional corporation for engineers is mandatory.
- Supervisory and senior positions in this unit group require experience.

Additional information

- There is limited mobility between the engineering specializations included in this unit group.
- Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practice in associated areas of science, engineering, sales, marketing or management.

Classified elsewhere

- Biochemical engineers (in 2134 *Chemical Engineers*)
- Marine engineer officers – water transport (in 2274 *Engineer Officers, Water Transport*)
- Physicists (in 2111 *Physicists and Astronomers*)

2151 Architects

Architects conceptualize, plan and develop designs for the construction and renovation of commercial, institutional and residential buildings. Architects are employed by architectural firms, private corporations and governments, or they may be self-employed.

Examples of titles classified in this unit group

Architect
Architectural Standards Specialist
Chief Architect
Consulting Architect
Industrial and Commercial Buildings Architect
Residential Architect

Main duties

Architects perform some or all of the following duties:

- Consult with clients to determine type, style and purpose of renovations or new building construction being considered
- Conceptualize and design buildings and develop plans describing design specifications, building materials, costs and construction schedules
- Prepare sketches and models for clients
- Prepare or supervise the preparation of blueprints for use by contractors and tradepersons
- Hire and supervise contractors and other personnel involved with the construction
- Supervise activities on construction sites to ensure compliance with specifications
- Conduct feasibility studies and financial analyses of building projects.

Architects usually specialize in a particular type of construction such as residential, commercial, industrial or institutional.

Employment requirements

- A bachelor's degree from a recognized school of architecture and two years of experience under the supervision of a registered architect
  or
  Completion of the syllabus of studies from the Royal Architectural Institute of Canada (RAIC) and eight years of on-the-job training under supervision of a registered architect is required.
- Completion of examinations set by provincial associations of architects is required.
- Registration with the provincial association of architects in the province of work is required.
- In Quebec, membership in the professional corporation for architects is mandatory.

Additional information

- Progression to senior positions, such as Chief Architect, is possible with experience.

Classified elsewhere

- *Architecture and Science Managers* (0212)
- *Landscape Architects* (2152)
- Naval architects (in 2148 *Other Professional Engineers, n.e.c.*)
- Structural engineers (in 2131 *Civil Engineers*)

2152 Landscape Architects

Landscape Architects conceptualize landscape designs, develop contract documents and oversee the construction of landscape development for commercial projects, office complexes, parks, golf courses and residential development. They are employed by architectural and engineering firms, landscape consulting firms, landscape contractors, and by government environmental and development agencies, or they may be self-employed.

Examples of titles classified in this unit group

Architect, Landscape

Landscape Architect

Main duties

Landscape Architects perform some or all of the following duties:

- Confer with clients to determine design needs
- Survey and assess designated sites and develop designs taking into consideration landscape features, buildings, climate, future usage and other aspects
- Prepare or oversee the preparation of detailed drawings for sites, including features such as trees, shrubs, gardens, lighting, walkways, patios, decks, benches, fences, retaining walls and fountains
- Prepare or oversee preparation of site plans, reports, sketches, models, photographs, maps, land use studies and design plans
- Estimate costs, prepare specifications and evaluate tenders for landscape construction projects
- Conduct environmental design studies, including environmental assessment, planning and the preservation and re-creation of historical sites
- May manage and supervise landscape construction work.

Employment requirements

- A bachelor's degree in landscape architecture is required.
- A master's degree in landscape architecture may be required.
- In Ontario and British Columbia, landscape architects require some landscape design experience and the successful completion of a provincial registration exam.
- In the remaining provinces and territories, landscape architects require some landscape design experience and an interview by their respective provincial associations to receive association certification.

Classified elsewhere

- *Architects* (2151)
- *Landscape and Horticulture Technicians and Specialists* (2225)
- *Urban and Land Use Planners* (2153)
- Landscape architecture managers (in 0212 *Architecture and Science Managers*)
- Landscape design contractors (in 8255 *Landscaping and Grounds Maintenance Contractors and Managers*)

2153 Urban and Land Use Planners

Urban and Land Use Planners develop plans and recommend policies for managing the utilization of land, physical facilities and associated services for urban and rural areas and remote regions. They are employed by all levels of government, land developers, engineering and other consulting companies or may work as private consultants.

Examples of titles classified in this unit group

City Planner
Community and Urban Planner
Environment Planner
Land Use Planner
Long Range Planner
Municipal Planner
Planner
Planning Analyst
Park Planner
Recreation Planner
Regional Planner
Urban Planner

Main duties

Urban and Land Use Planners perform some or all of the following duties:

- Compile and analyze data on demographic, economic, legal, political, cultural, sociological, physical and other factors affecting land use
- Confer with municipal, provincial and federal authorities, civic leaders, social scientists, lawyers, land developers, the public and special interest groups to formulate and develop land use or community plans
- Prepare and recommend land development concepts and plans for zoning, subdivisions, transportation, public utilities, community facilities, parks, agricultural and other land uses
- Prepare plans for environmental protection, such as wildlife preserves, national and provincial parks, and protection of watersheds
- Present plans to civic, rural and regional authorities and hold public meetings to present plans, proposals or planning studies to the general public and special interest groups
- Review and evaluate proposals for land use and development plans and prepare recommendations
- Process application for land development permits and administer land use plans and zoning by-laws
- Formulate long range objectives and policies relative to future land use and the protection of the environment
- Supervise and co-ordinate work of urban planning technicians and technologists.

Employment requirements

- A bachelor's degree in urban and regional planning, geography, architecture, engineering or a related discipline is required.
- A master's degree in one of these disciplines may be required.
- Membership in the Canadian Institute of Planners is usually required.
- Membership in a provincial planning institute may be required in some provinces.
- In Quebec, membership in the professional corporation for urban planners is mandatory.

Additional information

- Progression to management positions in planning is possible with experience.

Classified elsewhere

- *Architects* (2151)
- *Land Surveyors* (2154)
- Managers in land use planning (in 0411 *Government Managers in Health and Social Policy Development and Program Administration*)

2154 Land Surveyors

Land Surveyors plan, direct and conduct legal surveys to establish real property boundaries and prepare and maintain official plans, records and documents pertaining to these surveys. They are employed by federal, provincial and municipal governments, private sector land surveying establishments or they may be self-employed.

Examples of titles classified in this unit group

Commissioned Land Surveyor
Land Surveyor
Legal Surveyor
Professional Land Surveyor
Property Surveyor

Main duties

Land Surveyors perform some or all of the following duties:

- Develop survey plans, methods and procedures for conducting legal surveys
- Plan, direct and supervise or conduct surveys to establish legal boundaries of properties, parcels of lands, subdivision of lands for rural and urban development, utility rights-of-way, roadways and highways
- Record all measurements and other information obtained during survey activities
- Prepare or supervise the preparation and compilation of all data, plans, charts, records and documents related to surveys of real property boundaries
- Certify and assume liability for surveys made to establish real property boundaries
- Advise and provide consultation on matters related to legal surveys.

Employment requirements

- A bachelor's degree in surveying engineering or survey science
  or
  Successful completion of equivalent examinations set by a regional board of examiners for land surveyors is required.
- An approximately one to three-year articling period is required.
- Successful completion of professional land surveyor examinations is mandatory to obtain a federal or a provincial licence.
- In Quebec, membership in the professional corporation for land surveyors is mandatory.

Additional information

- Each province in Canada has statutory provisions for licensing which may restrict the interprovincial mobility of land surveyors.
- Federal statutes require a separate licence for land surveyors working under the federal jurisdiction.

Classified elsewhere

- *Civil Engineers* (2131)
- *Civil Engineering Technologists and Technicians* (2231)
- *Survey Technologists and Technicians* (2254)
- Hydrographic surveyors (in 2113 *Geologists, Geochemists and Geophysicists*)

2163 Computer Programmers

Computer Programmers write computer programs by coding sets of instructions into machine-readable form. They are employed in computer software and consulting firms and in programming units throughout the private and public sectors.

Examples of titles classified in this unit group

Application Programmer
Business Programmer
Computer Programmer
Operating Systems Programmer
Programmer – Computer Systems
Programmer Analyst
Scientific Programmer
Software Development Programmer
Software Programmer
Systems Programmer

Main duties

Computer Programmers perform some or all of the following duties:

- Write computer programs or software packages by coding instructions and algorithms into machine readable form
- Test, debug, document and implement computer programs or software packages
- Maintain existing computer programs by making minor modifications as required
- Act as a resource person, solving computer problems for users.

Employment requirements

- A bachelor's degree in computer science or in another discipline with a significant programming component, such as mathematics, commerce or business administration
  or
  Completion of a college program in computer science is usually required.
- Specialization in commercial or engineering and scientific applications requires specific post-secondary study or experience.
- Senior positions in this unit group, such as programmer analyst, require experience.

Additional information

- Progression to computer systems analysts is possible with experience.

Classified elsewhere

- *Computer Operators* (1421)
- *Computer Systems Analysts* (2162)
- Computer service technicians (in 2242 *Electronic Service Technicians [Household and Business Equipment]*)
- Computer training representatives (in 4131 *College and Other Vocational Instructors*)

2211 Applied Chemical Technologists and Technicians

Applied Chemical Technologists and Technicians may work independently or provide technical support in chemical engineering, chemical and biochemical research and analysis, industrial chemistry, chemical quality control and environmental monitoring. They are employed by research and development and quality control laboratories, consulting engineering companies, in chemical, petrochemical, pharmaceutical and a variety of other manufacturing and processing industries, and by utilities, health, education and government establishments.

Examples of titles classified in this unit group

Analytical Technician, Chemical
Biochemistry Technologist
Chemical Analyst
Chemical Engineering Technician
Chemical Engineering Technologist
Chemical Laboratory Analyst
Chemical Research Technician
Chemical Technician
Chemical Technologist
Food Technologist
Formulation Technician
Geochemical Technician
Industrial Hygiene Technologist
Laboratory Technician, Biochemistry
Laboratory Technician, Chemical
Laboratory Technologist, Chemical
Mass Spectrometer Technician
Master Dyer, Textiles
Paint Technician
Pilot Plant Technician
Quality Control Technician – Chemical Processing
Quality Control Technician – Food Processing

Main duties

Applied chemical technologists perform some or all of the following duties:

- Set up and conduct chemical experiments, tests and analyses using techniques such as chromatography, spectroscopy, physical and chemical separation techniques and microscopy
- Operate and maintain laboratory equipment and apparatus and prepare solutions, reagents, and sample formulations
- Compile records and interpret experimental or analytical results
- Develop and conduct programs of sampling and analysis to maintain quality standards of raw materials, chemical intermediates and products
- Assist in the development of chemical engineering processes, studies of chemical engineering procurement, construction, inspection and maintenance and the development of standards, procedures and health and safety measures
- Operate experimental chemical or petrochemical pilot plants
- Assist in the design and fabrication of experimental apparatus.

Applied chemical technicians perform some or all of the following duties:

- Assist in setting up and conducting chemical experiments, tests and analyses
- Operate and maintain laboratory equipment and apparatus and prepare solutions, reagents and sample formulations
- Compile records for analytical studies
- Assist in developing and conducting programs of sampling and analysis to maintain quality standards
- Carry out a limited range of other technical functions in support of chemical research, tests and analyses
- Assist in the design and fabrication of experimental apparatus.

Employment requirements

- Applied chemical technologists usually require completion of a two or three-year college program in chemical, biochemical or chemical engineering technology or a closely related discipline.
- Applied chemical technicians usually require completion of a one or two-year college program in chemical, biochemical or chemical engineering technology.
- Certification in chemical engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required by employers.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.

- A period of supervised work experience, usually two years, is required before certification.

Additional information

- Considerable mobility is possible among jobs within this occupational group.
- Progression to managerial positions is possible with experience.
- Some chemical technologists and technicians working in support of fundamental research in chemistry or biochemistry are university graduates.

Classified elsewhere

- Biochemistry technologists working as medical laboratory technologists (in 3211 *Medical Laboratory Technologists and Pathologists' Assistants*)
- Process technicians who operate the controls of chemical or petrochemical processing plants (in 9232 *Petroleum, Gas and Chemical Process Operators*)

2212 Geological and Mineral Technologists and Technicians

Geological and Mineral Technologists and Technicians may work independently or provide technical support and services in the fields of oil and gas exploration and production, geophysics, petroleum engineering, geology, mining and mining engineering, mineralogy, extractive and physical metallurgy and metallurgical engineering. They are employed by petroleum and mining companies, consulting geology and engineering firms, and by governments and educational institutions as well as by a variety of manufacturing, construction and utilities companies.

Examples of titles classified in this unit group

Assayer
Geological Technician
Geophysical Technologist
Groundwater Technologist
Log Technician
Marine Geoscience Technologist
Metallurgical Technologist
Mineralogy Technician
Mining Engineering Technologist
Mining Technologist
Petroleum Technician
Petroleum Engineering Technologist
Petrology Technician
Reservoir Engineering Technician
Rock Mechanics Technician
Seismic Technician
Welding Technologist

Main duties

Geological and mineral technologists perform some or all of the following duties:

- Conduct or direct geological, geophysical, geochemical, hydrographic or oceanographic surveys, prospecting field trips, exploratory drilling, well logging or underground mine survey programs
- Operate and maintain geophysical survey and well logging instruments and equipment
- Prepare notes, sketches, geological maps and cross sections
- Prepare, transcribe or analyze seismic, gravimetric, well log or other geophysical and survey data
- Assist engineers and geologists in the evaluation and analysis of petroleum and mineral reservoirs
- Prepare or supervise the preparation of rock, mineral or metal samples and perform physical and chemical laboratory tests
- May supervise oil and gas well drilling, well completions and work-overs
- May conduct or supervise studies and programs related to mine development, mining methods, mine ventilation, lighting, drainage and ground control
- May assist engineers and metallurgists in specifying material selection, metal treatments or corrosion protection systems
- May assist hydrogeologists in evaluating groundwater and well circulation and in report preparation
- May develop specifications for heat treatment of metals or for welding, design welding fixtures, troubleshoot welding processes or quality problems and supervise welding projects.

Geological and mineral technicians perform some or all of the following duties:

- Participate in geological, geophysical, geochemical, hydrographic or oceanographic surveys, prospecting field trips, exploratory drilling, well logging or underground mine survey programs
- Operate and maintain geophysical survey and well logging instruments and equipment
- Prepare notes, sketches, geological maps and cross sections
- Assist in preparing, transcribing or analyzing seismic, gravimetric, well log or other geophysical and survey data
- Assist in the preparation of rock, mineral or metal samples and in conducting physical and chemical laboratory tests
- Assist in hydrogeological field and laboratory studies and in preparation of reports
- Carry out a limited range of other technical functions in support of geology, geophysics and petroleum and mining engineering.

2212 Geological and Mineral Technologists and Technicians

Employment requirements

- Geological and mineral technologists usually require completion of a two to three-year college program in geological technology, petroleum technology, petroleum engineering technology, hydrogeology or groundwater technology, mining technology, mining engineering technology, mineralogy, metallurgical technology, or welding technology.
- Geophysics technologists usually require completion of a two to three-year college program in electronics technology.
- Geological and mineral technicians usually require completion of a one to two-year college program in a related field.
- Certification in geological and mineral technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required by employers.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.
- A period of supervised work experience, usually two years, is required before certification.

Additional information

- There is limited mobility between occupations in this group.
- Mobility may be possible between geophysical technology and electronic technology.
- Mobility may be possible between some occupations in this group and related fields of civil engineering technology.

Classified elsewhere

- *Civil Engineering Technologists and Technicians* (2231)
- *Electrical and Electronics Engineering Technologists and Technicians* (2241)
- *Mapping and Related Technologists and Technicians* (2255)
- *Supervisors, Mining and Quarrying* (8221)
- *Supervisors, Oil and Gas Drilling and Service* (8222)
- Technologists and technicians whose primary duties are to perform chemical laboratory tests (in 2211 *Applied Chemical Technologists and Technicians*)

2213 Meteorological Technicians

Meteorological Technicians observe weather and atmospheric conditions, record and interpret meteorological data, transmit and report on recorded information, and provide meteorological information and advice to the general public, the transportation industry and the media. They are employed by the Atmospheric Environment Service of Environment Canada and by the armed forces, private consulting companies, resource and utility companies and by provincial governments.

Examples of titles classified in this unit group

Aerological Technician
Avalanche Controller
Climate Service Technician
Climate Data Processor
Climate Service Specialist
Ice Service Specialist
Meteorological Inspector
Meteorological Technician
Officer-in-charge, Weather Station
Operations Technician, Weather Station
Port Meteorological Inspector
Surface Weather Observer
Weather Service Specialist

Main duties

Meteorological Technicians perform some or all of the following duties:

- Observe, record and transmit atmospheric and weather information including air pressure, temperature, humidity, wind, precipitation, cloud and ultraviolet conditions
- Observe, chart and report on ice conditions in navigable waters
- Provide weather information to various users such as pilots, farmers, shipping industries and news media
- Inspect and service various weather service installations and maintain equipment and instruments
- Analyze and interpret weather data
- Maintain climatological data bases and participate in the production of weather maps and charts
- Observe snow conditions and participate in programs to control avalanches in mountainous terrain.

Employment requirements

- Completion of secondary school is required.
- Completion of a meteorological technician program provided by the Atmospheric Environment Service is required.
- Initial training may be up to one year, with subsequent specialized training available.

Classified elsewhere

- *Meteorologists* (2114)

2221 Biological Technologists and Technicians

Biological Technologists and Technicians may work independently or provide technical support and services to scientists, engineers and other professionals working in fields of agriculture, resource management, plant and animal biology, microbiology, cell and molecular biology and health sciences. They are employed in both laboratory and field settings by governments, manufacturers of food products, chemicals and pharmaceuticals, biotechnology companies, health, research and educational institutions, environmental consulting companies and resource and utilities companies.

Examples of titles classified in this unit group

Agricultural Technician
Agricultural Technologist
Agrology Technician
Aquaculture Technician
Bacteriology Technician
Biological Laboratory Technologist
Botanical Technician
Fish Hatchery Technician
Fisheries Technician
Food Bacteriological Technician
Microbiology Quality Control Technologist
Microbiology Technologist
Plant Breeding Technician
Seed Technologist
Wildlife Biology Technician

Main duties

Biological technologists perform some or all of the following duties:

- Conduct biological, microbiological and biochemical tests and laboratory analyses in support of quality control in food production, sanitation, pharmaceutical production and other fields
- Perform experimental procedures in agriculture, plant breeding, animal husbandry, biology and biomedical research
- Conduct field research and surveys to collect data and samples of water, soil, plant and animal populations
- Analyze data and prepare reports
- Conduct or supervise operational programs such as fish hatchery, greenhouse and livestock production programs.

Biological technicians perform some or all of the following duties:

- Assist in conducting biological, microbiological and biochemical tests and laboratory analyses
- Perform limited range of technical functions in support of agriculture, plant breeding, animal husbandry, biology and biomedical research
- Assist in conducting field research and surveys to collect data and samples of water, soil, plant and animal populations
- Assist in analysis of data and preparation of reports.

Employment requirements

- Completion of a two to three-year college program in a field related to agriculture, biology, microbiology, wildlife or resource management is usually required for employment as a biological technologist.
- Completion of a one to two-year college program in a related field is required for employment as a biological technician.
- Certification with provincial associations is available, but voluntary.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.

Additional information

- There is limited mobility between occupations in this group.
- The use of the term technologist and technician has not become standardized in this field. Some technicians working in support of government and academic research in biology are university graduates.

Classified elsewhere

- *Agricultural and Fish Products Inspectors* (2222)
- *Conservation and Fishery Officers* (2224)
- *Forestry Technologists and Technicians* (2223)
- *Medical Laboratory Technicians* (3212)

2221 Biological Technologists and Technicians

- *Medical Laboratory Technologists and Pathologists' Assistants* (3211)
- Biochemistry technologists and technicians, except medical (in 2211 *Applied Chemical Technologists and Technicians*)
- Biomedical engineering technologists (in 2241 *Electrical and Electronics Engineering Technologists and Technicians*)

2222 Agricultural and Fish Products Inspectors

Agricultural and Fish Products Inspectors inspect agricultural and fish products for conformity to prescribed production, storage and transportation standards. They are employed by government departments and agencies and by private sector food processing companies. Supervisors of Agricultural and Fish Products Inspectors are also included in this group.

Examples of titles classified in this unit group

Agricultural Products Inspector
Crop Certification Inspector
Dairy Products Inspector
Fish and Fish Products Inspector
Fruit and Vegetables Inspector
Grain Inspector
Livestock Inspector
Plant Protection Inspector
Poultry Inspector
Supervisor, Agricultural Products Inspection
Supervisor, Fish Products Inspection

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Fish and fish products inspectors inspect fish, fish products, fish handling and processing methods, prepare reports and ensure that regulations are upheld.
- Fruit and vegetables inspectors inspect fresh and frozen fruit and vegetables at an inspection centre and prepare reports on crop production and market conditions.
- Grain inspectors inspect and grade all classes of grain at terminal elevators, monitor the fumigation of infested grain and of storage, handling and transportation equipment to ensure that sanitary procedures are followed.
- Meat inspectors monitor the operations and sanitary conditions of slaughtering or meat processing plants and inspect carcasses to ensure they are fit for human consumption.
- Plant protection inspectors certify seed crops, oversee the quarantine, treatment or destruction of plants and plant products, and the fumigation of plants and plant product imports and exports.

Employment requirements

- Completion of secondary school is required.
- A bachelor's degree or college diploma in agriculture, biology or food processing technology
  or
  Several years of experience in agricultural production or fish processing are required.
- Completion of in-house training courses is required.

Additional information

- Progression to managerial positions in this field is possible with experience

Classified elsewhere

- *Biological Technologists and Technicians* (2221)
- *Forestry Technologists and Technicians* (2223)
- *Inspectors in Public and Environmental Health and Occupational Health and Safety* (2263)
- Fish graders and meat graders who perform routine quality control duties or tally landed fish (in 9465 *Testers and Graders, Food and Beverage Processing*).

2223 Forestry Technologists and Technicians

Forestry Technologists and Technicians may work independently or perform technical and supervisory functions in support of forestry research, forest management, forest harvesting and forest resources conservation and protection. They are employed by the forest industry sector, provincial and federal governments, consulting firms, and other industries and institutions or they may be self-employed.

Examples of titles classified in this unit group

Conservation Technician – Forestry
Cruising Technician – Forestry
Enforcement Officer – Forestry
Extension Ranger – Forestry
Fire Suppression Officer – Forestry
Forest Fire Technician
Forest Survey Technician
Forest Technician
Forestry Technician
Forestry Technologist
Resource Officer, Forest Inventory
Resource Technician – Forestry
Scaler Technician – Logging
Scaling Co-ordinator – Logging
Silviculture Technician

Main duties

Forestry Technologists and Technicians perform some or all of the following duties:

- Conduct, supervise and participate in forest inventory cruises, surveys and field measurements following accepted scientific and operational procedures
- Assist and perform technical functions in the preparation of forest management and harvest plans using photogrammetric and mapping techniques and computerized information systems
- Assist in planning and supervise construction of access routes and forest roads
- Implement, supervise and perform technical functions in silvicultural operations involving site preparation, planting, and tending of tree crops
- Co-ordinate activities such as timber scaling, forest fire suppression, disease or insect control or pre-commercial thinning of forest stands
- Supervise and perform technical functions in forest harvesting operations
- Monitor activities of logging companies and contractors and enforce regulations such as those concerning environmental protection, resource utilization, fire safety and accident prevention
- Provide forestry education, advice and recommendations to woodlot owners, community organizations and the general public
- Develop and maintain computer databases
- Supervise forest tree nursery operations
- Provide technical support to forestry research programs in areas such as tree improvement, seed orchard operations, insect and disease surveys or experimental forestry and forest engineering research.

Employment requirements

- Completion of a one to three-year college program in forestry technology or in a renewable resource program or forest ranger program is usually required.
- Certification in or registration with a provincial association as a forestry technologist or technician may be required.
- Certification or licensing as a scaler is required for some positions.
- In Quebec, membership in the professional corporation for technologists in the applied sciences is mandatory.

Additional information

- Mobility may be possible to occupations in natural resource and wildlife management, supervision and parks management occupations.

Classified elsewhere

- *Biological Technologists and Technicians* (2221)
- *Conservation and Fishery Officers* (2224)
- Forestry technologists and technicians working as supervisors of woodlands operations (in 8211 *Supervisors, Logging and Forestry*)
- Foresters and forest engineers (in 2122 *Forestry Professionals*)

2224 Conservation and Fishery Officers

Conservation and Fishery Officers enforce the federal and provincial regulations established for the protection of fish, wildlife and other natural resources and collect and relay information on resource management. They are employed by federal and provincial government departments.

Examples of titles classified in this unit group

Conservation Officer
Fish and Wildlife Officer
Fishery Officer
Forest Ranger, Wildlife Management
Game Officer
Game Warden
Natural Resource Officer
Park Ranger

Main duties

Conservation and Fishery Officers perform some or all of the following duties:

- Generate public awareness of fish and wildlife conservation and regulations
- Conduct patrols by truck, aircraft, boat, or on foot, to ensure compliance with the provincial and federal statutes relating to fish, wildlife and the environment
- Investigate complaints, arrest violators, prepare briefs and present evidence in court
- Issue licences, export documents and special permits and collect royalties assessed on fish, wildlife and timber resources
- Implement and supervise approved techniques in preventing or overcoming damage caused by wildlife
- Perform resource protection duties
- Gather resource data by making inventories of fish, collecting water samples and assisting biologists in scientific research
- Supervise or provide firearms safety training courses and trapper education courses.

Employment requirements

- Completion of a one to three-year college program in renewable resources management is required.
- On-the-job training and courses related to law enforcement and resource management are provided.
- A class 5 driver's licence, pesticide applicators licence and explosives licence may be required.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory for some occupations in this group.

Additional information

- Progression to senior and supervisory positions is possible with experience.

Classified elsewhere

- *Biological Technologists and Technicians* (2221)
- *Forestry Technologists and Technicians* (2223)
- Fish inspectors (in 2222 *Agricultural and Fish Products Inspectors*)

2225 Landscape and Horticulture Technicians and Specialists

This unit group includes those who survey and assess landscapes; draw sketches and build models of landscape designs; construct and maintain gardens, parks, golf courses and other landscaped environments; advise clients on issues related to horticulture; breed, cultivate and study plants; analyze forest growth; and treat injured and diseased trees and plants. They are employed by landscape designers and contractors, lawn service and tree care establishments, golf courses, nurseries and greenhouses, municipal, provincial and national parks, or they may be self-employed.

Examples of titles classified in this unit group

Arborist
Golf Course Superintendent
Horticulture Specialist
Horticultural Technician
Horticulturist
Hydroponics Technician
Landscape Architectural Technician
Landscape Gardener
Landscape Specialist
Landscape Technician
Landscaper
Lawn Care Specialist
Silviculturist
Tree Service Technician

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Arborists and tree service technicians examine trees and shrubs to diagnose problems and disease, and apply various treatments such as pruning, spraying, repairing damaged areas and injecting with treatment solution.
- Golf course superintendents direct crews who maintain the health and appearance of golf courses and their surrounding landscapes, plant and move trees, and apply fertilizers, fungicides, herbicides and pesticides.
- Horticulturists plan and co-ordinate the growth and use of plants for landscaping, ornamental uses and other purposes.
- Landscape designers and landscape architectural technicians and technologists survey and assess sites, prepare drawings, sketches and reports and perform other duties to assist landscape architects in designing landscaped environments.
- Landscape gardeners plant and maintain private and public lawns and gardens.
- Landscapers plan and construct landscaped environments which may include trees, shrubberies, lawns, fences, decks, patios and other landscape structures.
- Lawn care specialists visit clients, assess the health of lawns, and apply fertilizer, pesticides and other lawn care products.

Employment requirements

- Completion of a university or college program in agronomy, arboriculture, forestry, horticulture, landscaping, landscape design, landscape technology or silviculture is usually required.
- Experience as a landscape and grounds maintenance labourer may be required for golf course superintendents, landscape gardeners and landscapers.
- A provincial licence to apply chemical fertilizers, fungicides, herbicides and pesticides may be required.
- Apprenticeship programs in horticulture are available in Ontario and British Columbia.
- Apprenticeship programs in landscape gardening are available in Ontario and Alberta.

Classified elsewhere

- *Biological Technologists and Technicians* (2221)
- *Forestry Technologists and Technicians* (2223)
- *Landscape Architects* (2152)
- *Landscaping and Grounds Maintenance Contractors and Managers* (8255)
- *Nursery and Greenhouse Operators and Managers* (8254)
- *Nursery and Greenhouse Workers* (8432)
- *Supervisors, Landscape and Horticulture* (8256)
- Botanists (in 2121 *Biologists and Related Scientists*)

2231 Civil Engineering Technologists and Technicians

Civil Engineering Technologists and Technicians may work independently or provide technical support and services in civil engineering in fields such as structural engineering, municipal engineering, construction design and supervision, highways and transportation engineering, water resources engineering and geotechnical engineering. They are employed by consulting engineering and construction companies, public works, transportation and other government departments and in many other industries.

Examples of titles classified in this unit group

Bridge Design Technician
Building Materials Technician
Civil Engineering Technician
Civil Engineering Technologist
Construction Technologist
Foundation Technologist
Highway Technician
Municipal Engineering Assistant
Soil Technologist, Civil Engineering
Specification Writer, Construction
Structural Design Technologist
Structural Investigator

Main duties

Civil engineering technologists perform some or all of the following duties:

- Develop engineering designs and drawings from preliminary concepts and sketches
- Prepare construction specifications, cost and material estimates, project schedules and reports
- Supervise or conduct field surveys, inspections or technical investigations of topography, soils, drainage and water supply systems, road and highway systems, buildings and structures to provide data for engineering projects
- Conduct or supervise inspection and testing of construction materials
- May supervise, monitor and inspect construction projects.

Civil engineering technicians perform some or all of the following duties:

- Assist in developing engineering specifications and drawings
- Participate in field surveys, inspections or technical investigations of topography, soils, drainage and water supply systems, road and highway systems, buildings and structures to provide data for engineering projects
- Perform other technical functions in support of civil engineering activities.

Employment requirements

- Completion of a two or three-year college program in civil engineering technology or a closely related discipline is usually required for civil engineering technologists.
- Completion of a one or two-year college program in civil engineering technology is usually required for civil engineering technicians.
- Certification in civil engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required for some positions.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.
- A period of supervised work experience, usually two years, is required before certification.

Additional information

- There is mobility to related occupations, such as drafting technologists and technicians and construction inspectors and estimators.
- Progression to construction supervisors or construction managers is possible with experience.
- In data provided by Statistics Canada, unit groups 2231 and 2234 are combined to form 2230 *Civil Engineering Technologists and Technicians and Construction Estimators*.

Classified elsewhere

- *Architectural Technologists and Technicians* (2251)
- *Construction Estimators* (2234)
- *Construction Inspectors* (2264)
- *Construction Managers* (0711)
- *Drafting Technologists and Technicians* (2253)
- *Survey Technologists and Technicians* (2254)

2232 Mechanical Engineering Technologists and Technicians

Mechanical Engineering Technologists and Technicians may work independently or provide technical support and services in mechanical engineering fields such as the design, development, maintenance and testing of machines, components, tools, heating and ventilating systems, power generation and power conversion plants, and manufacturing plants and equipment. They are employed by consulting engineering, manufacturing and processing companies, institutions and government departments.

Examples of titles classified in this unit group

Aeronautical Technologist
H.V.A.C. Technologist
Heating Designer
Machine Designer
Marine Engineering Technologist
Mechanical Engineering Technician
Mechanical Engineering Technologist
Mechanical Technologist
Mould Designer
Thermal Station Technician
Tool Designer
Tool and Die Designer

Main duties

Mechanical engineering technologists perform some or all of the following duties:

- Prepare engineering designs, drawings, and specifications for machines and components, power transmission systems, process piping, heating, ventilating and air-conditioning systems
- Prepare cost and material estimates, project schedules and reports
- Conduct tests and analyses of machines, components and materials to determine their performance, strength, response to stress and other characteristics
- Design moulds, tools, dies, jigs and fixtures for use in manufacturing process
- Inspect mechanical installations and construction
- Prepare contract and tender documents
- Supervise, monitor and inspect mechanical installations and construction projects
- Prepare standards and schedules and supervise mechanical maintenance programs or operations of mechanical plants.

Mechanical engineering technicians perform some or all of the following duties:

- Assist in preparing engineering design, drawings and specifications
- Carry out a limited range of mechanical tests and analyses of machines, components and materials
- Assist in the design of moulds, tools, dies, jigs and fixtures for use in manufacturing process
- Assist in inspection of mechanical installations and construction projects
- Participate in the installation, repair and maintenance of machinery and equipment.

Employment requirements

- Completion of a two or three-year college program in mechanical engineering technology is usually required for mechanical engineering technologists.
- Completion of a one or two-year college program in mechanical engineering technology is usually required for mechanical engineering technicians.
- Certification in mechanical engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required for some positions.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.
- A period of supervised work experience, usually two years, is required before certification.

Additional information

- There is mobility to other related occupations such as technical sales or drafting technologists and technicians.
- Progression to mechanical construction supervisors, manufacturing or operations managers is possible with experience.

Classified elsewhere

- *Contractors and Supervisors, Trades and Related Workers* (721)
- *Drafting Technologists and Technicians* (2253)
- *Industrial Designers* (2252)
- *Managers in Manufacturing and Utilities* (091)
- *Technical Sales Specialists, Wholesales Trade* (6221)

2233 Industrial Engineering and Manufacturing Technologists and Technicians

Industrial Engineering and Manufacturing Technologists and Technicians may work independently or provide technical support and services in the development of production methods, facilities and systems, and the planning, estimating, measuring and scheduling of work. They are employed by manufacturing and insurance companies, government departments and in other industries.

Examples of titles classified in this unit group

Industrial Engineering Technician
Industrial Engineering Technologist
Loss Prevention Technologist
Manufacturing Technician
Manufacturing Technologist
Numerical Control Tool Programmer
Planning Technician
Plastics Manufacturing Technician
Pulp and Paper Manufacturing Technologist
Quality Assurance Technologist
Scheduling Technician, Manufacturing
Textile Technologist
Time Study Analyst

Main duties

Industrial engineering and manufacturing technologists perform some or all of the following duties:

- Develop and conduct production, inventory and quality assurance programs in manufacturing or in other industries
- Design plant layouts and production facilities
- Develop and carry out work study and related programs
- Develop and carry out industrial health, safety and fire prevention plans and programs and conduct safety training programs
- Develop computer applications for the control of robots, numerical control machines and manufacturing processes and operations
- May specialize in the development of production processes, quality assurance programs, plans and schedules in a particular industrial area such as metal fabrication, plastics, pulp and paper, or textile manufacturing.

Industrial engineering and manufacturing technicians perform some or all of the following duties:

- Assist in the design of plant layouts
- Conduct work measurement or other studies
- Collect and compile operational or experimental data and assist in the development of estimates, schedules, specifications and reports
- Collect and analyze data and samples in support of quality assurance and industrial health and safety programs
- Develop manufacturing and processing procedures and variables, set machine or equipment controls, oversee production and inspect processes.

Employment requirements

- Completion of a two or three-year college program or equivalent in industrial engineering technology, pulp and paper technology, plastics technology, textile technology, manufacturing technology or in a related discipline is usually required for industrial engineering or manufacturing technologists.
- Completion of a one or two-year college program in industrial engineering technology or in a related discipline is usually required for industrial engineering or manufacturing technicians.
- Certification in industrial engineering or manufacturing technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required for some positions.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.
- A period of supervised work experience, usually two years, is required before certification.

Additional information

- There is mobility to related fields such as technical sales.
- Progression to managerial positions is possible with experience.

Classified elsewhere

- *Technical Sales Specialists, Wholesale Trade* (6221)
- Textile technologists/technicians working in support of chemical dyeing and finishing and quality control technologists/technicians in food or chemical industries or laboratories (in 2211 *Applied Chemical Technologists and Technicians)*

2234 Construction Estimators

Construction Estimators analyse costs of and prepare estimates on civil engineering, architectural, structural, electrical and mechanical construction projects. They are employed by residential, commercial and industrial construction companies and major electrical, mechanical and trade contractors.

Examples of titles classified in this unit group

Chief Estimator – Construction
Construction Estimator
Cost Estimator – Construction
Principal Estimator – Construction
Quantity Surveyor – Construction

Main duties

Construction Estimators perform some or all of the following duties:

- Prepare estimate of probable costs of materials, labour and equipment for a construction project based on contract bids, quotations, schematic drawings and specifications
- Advise on tendering procedures, examine and analyse tenders, recommend tender awards and conduct negotiations
- Establish and maintain tendering process and set up cost monitoring and reporting systems and procedures
- Prepare cost and expenditure statement at regular intervals for the duration of the project
- Prepare and maintain a directory of suppliers, contractors and subcontractors
- Liaise, consult and communicate with engineers, architects, owners, contractors and subcontractors on changes and adjustments to cost estimates.

Estimators may specialize in estimating costs for structural, electrical or mechanical construction projects.

Employment requirements

- Completion of secondary school is required
- A civil engineering college diploma in construction technology
  or
  Several years of experience as a qualified tradesperson in a construction trade, such as plumbing, carpentry or electrical trade are required.
- Certification by the Canadian Institute of Quantity Surveyors may be required by some employers.
- In Quebec, membership in the professional corporation for estimators is mandatory.

Additional information

- Progression to more senior positions in this unit group, such as senior estimator or to construction management positions is possible with experience.
- In data provided by Statistics Canada, unit groups 2231 and 2234 are combined to form 2230 *Civil Engineering Technologists and Technicians and Construction Estimators.*

Classified elsewhere

- *Civil Engineers* (2131)
- *Civil Engineering Technologists and Technicians* (2231)
- *Construction Managers* (0711)

2241 Electrical and Electronics Engineering Technologists and Technicians

Electrical and Electronics Engineering Technologists and Technicians may work independently or provide technical support and services in the design, development, testing, production, and operation of electrical and electronic equipment and systems. They are employed by electrical utilities, communications companies, manufacturers of electrical and electronic equipment, consulting firms, and in governments and a wide range of manufacturing, processing and transportation industries.

Examples of titles classified in this unit group

Communications Technologist
Distribution Design Technologist, Lines
Electrical Engineering Technician
Electrical Engineering Technologist
Electronics Design Technologist
Electronics Engineering Technician
Electronics Engineering Technologist
Electronics Manufacturing Technician
Electronics Manufacturing Technologist
Electronics Technologist, Physics Department
Lighting Technologist
Metering Technologist
Microwave Maintenance Technician
Production Support Technician, Electronics

Main duties

Electrical and electronics engineering technologists perform some or all of the following duties:

- Design, develop and test power equipment and systems, industrial process control systems, telecommunication, broadcast, recording and audiovisual systems, microelectronic systems and circuits, computers, computer systems and networks, and computer software
- Supervise the building and testing of prototypes according to general instructions and established standards
- Conduct or supervise the installation, commissioning, and operation of electrical and electronic equipment and systems other than aircraft electronics or instruments
- Carry out applied research in fields of electrical and electronic engineering and physics under the direction of scientists or engineers
- Set up and operate specialized and standard test equipment to diagnose, test and analyze the performance of electrical and electronic components, assemblies and systems
- Write specifications, schedules and technical reports and control schedules and budgets.

Electrical and electronics engineering technicians perform some or all of the following duties:

- Assist in the design, development and testing of electrical and electronic components, equipment, and systems
- Assist in inspection, testing, adjusting and evaluation of incoming electrical, electro-mechanical and electronic components and assemblies to ensure conformance with product specifications and tolerances
- Conduct life tests (burn-ins) on assemblies and record and analyze results
- Assist in building and testing prototypes to specifications
- Carry out a limited range of technical functions in support of research in electrical and electronic engineering and physics
- Install, operate and maintain electrical and electronic equipment and systems
- Calibrate electrical or electronic equipment and instruments according to technical manuals and written instructions
- Collect and compile operational or experimental data and assist in the preparation of estimates, schedules, budgets, specifications and reports.

Employment requirements

- Completion of a two or three-year college program in electrical or electronics engineering technology, computer engineering technology, telecommunications technology or an equivalent is usually required for electrical or electronics engineering technologists.
- Completion of a one or two-year college program in electrical or electronics engineering technology is usually required for electrical or electronics engineering technicians.

2241 Electrical and Electronics Engineering Technologists and Technicians

- Certification in electrical or electronics engineering technology or in a related field is available through provincial associations of engineering/applied science technologists and technicians and may be required for some positions.
- In Quebec, membership in the professional corporation for technologists in the applied sciences is mandatory.
- A period of supervised work experience, usually two years, is required before certification.

Additional information

- There is mobility to other related occupations such as technical sales, electronics service technicians, instrument technicians and avionics technicians.
- Progression to managerial positions in engineering, production or operations is possible with experience.

Classified elsewhere

- *Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors* (2244)
- *Electronic Service Technicians (Household and Business Equipment)* (2242)
- *Industrial Instrument Technicians and Mechanics* (2243)
- *Technical Sales Specialists, Wholesale Trade* (6221)

2242 Electronic Service Technicians (Household and Business Equipment)

Electronic service technicians service and repair household and business electronic equipment such as audio and video systems, computers and peripherals, office equipment and other consumer electronic equipment and assemblies. They are employed by electronic service establishments, retail and wholesale distributors, and within service departments of electronic manufacturing companies.

Examples of titles classified in this unit group

Alarm System Technician
Audio-Video Service Technician
Computer Service Technician
Electronic Service Technician Supervisor
Field Service Technician, Electronic Products
Office Equipment Service Technician
Photocopy Machine Technician
Radio and Television Repair Apprentice
Television Servicer

Main duties

Electronic service technicians perform some or all of the following duties:

- Install, maintain and repair household and business electronic equipment, such as televisions, radios, video cassette recorders, stereo equipment, photocopiers, computers and peripherals
- Inspect and test electronic equipment, components and assemblies using multimeters, circuit testers, oscilloscopes, logic probes and other electronic test instruments, tools and equipment
- Diagnose and locate circuit, component and equipment faults
- Adjust, align, replace or repair electronic equipment, assemblies and components following equipment manuals and schematics, and using soldering tools and other hand and power tools
- Complete work orders, test and maintenance reports
- May supervise other electronic equipment service technicians.

Employment requirements

- Completion of a two to three-year college program in electronics
  or
  Completion of a four-year apprenticeship program in electronic servicing and repair
  or
  Completion of high school or college courses in electronics and on-the-job training is required.
- Trade certification for electronic technician, consumer products is compulsory in Alberta and available, but voluntary, in Prince Edward Island, New Brunswick, Ontario, Saskatchewan, British Columbia, the Northwest Territories and the Yukon.
- In Quebec, membership in the professional corporation for electronic service technicians is mandatory.

Classified elsewhere

- *Electrical and Electronics Engineering Technologists and Technicians* (2241)

2243 Industrial Instrument Technicians and Mechanics

Industrial Instrument Technicians and Mechanics repair, maintain, calibrate, adjust, and install industrial measuring and controlling instrumentation. They are employed by pulp and paper processing companies, nuclear and hydro power generating companies, mining, petrochemical and natural gas companies, industrial instrument and other manufacturing companies, and by industrial instrument servicing establishments. Industrial instrument mechanic apprentices are included in this unit group.

Example of titles classified in this unit group

Industrial Instrument Mechanic
Industrial Instrument Mechanic Apprentice
Instrument Mechanic, Industrial
Instrumentation Technician, Industrial
Instrument Technician, Industrial
Process Control Equipment Mechanic

Main duties

Industrial Instrument Technicians and Mechanics perform some or all of the following duties:

- Consult manufacturer's manuals to determine tests and maintenance procedures for instruments used for measuring and controlling flow, level, pressure, temperature and other variables in manufacturing and processing
- Inspect and test operation of instruments and systems to diagnose faults using testing devices
- Repair and adjust system components or remove and replace defective parts
- Calibrate components and instruments according to manufacturers' specifications
- Perform scheduled preventive maintenance work and complete test and maintenance reports
- Install new control instruments on existing plant equipment.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a four-year apprenticeship program in industrial instrument repair
  or
  Completion of a two-year college program in industrial instrumentation technology and several years of work experience are usually required for trade certification.
- Industrial instrument mechanic trade certification is available, but voluntary, in Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, Manitoba, Saskatchewan, Alberta, British Columbia, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified industrial instrument mechanics.
- In Quebec, membership in the professional corporation for technologists in the applied sciences is mandatory.

Additional information

- Red Seal trade certification allows for interprovincial mobility.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Electrical and Electronics Engineering Technologists and Technicians* (2241)
- Aircraft instrument technicians (in 2244 *Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors*)
- Industrial mechanics (in 7311 *Construction Millwrights and Industrial Mechanics (Except Textile)*)

2244 Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors

This unit group includes mechanics and technicians who adjust, repair and overhaul aircraft instrument, electrical, or avionics systems on aircrafts. This unit group also includes avionics inspectors who inspect instrument, electrical and avionics systems following assembly, modification, repair or overhaul. Workers in this unit group are employed by aircraft manufacturing, maintenance and overhaul establishments and by airlines, the armed forces and other aircraft operators.

Examples of titles classified in this unit group

Aircraft Electrical Technician
Aircraft Electrician
Aircraft Instrument Mechanic
Aircraft Maintenance Engineer, Avionics
Avionics Inspector
Avionics Technician
Electronics Inspector, Missiles
Instrument Inspector, Aircraft
Instrument Overhaul and Repair Mechanic

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Aircraft instrument mechanics and technicians repair and overhaul, install and test aircraft instruments.
- Aircraft electrical mechanics and technicians repair and overhaul, modify, install and test aircraft electrical systems and equipment.
- Avionics mechanics and technicians repair and overhaul, modify, adjust and test aircraft electronic systems and equipment, including communications and navigation equipment.
- Avionics inspectors inspect and test aircraft instrument, electrical and avionics systems and certify that the installation, maintenance, repair and overhaul of these systems meet Transport Canada and company standards of performance and safety.

Employment requirements

- Aircraft instrument and avionics mechanics and technicians require completion of a two to three-year college program in avionics or electronics
  or
  Completion of a four-year apprenticeship program.
- Aircraft electrical mechanics and technicians usually require completion of a college program as an electrical or electronic technician.
- Several years of on-the-job training are provided for all mechanics and technicians in this unit group.
- Mechanics and technicians who sign maintenance releases require an Aircraft Maintenance Engineer's (AME) licence issued by Transport Canada.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.
- Avionics inspectors require completion of a two to three-year college program in avionics or electronics; three to five years of experience as an avionics mechanic or technician; and an AME licence with endorsements for avionics systems.

2244 Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors

Additional information

- Progression to supervisory positions within specific areas of expertise is possible with experience.
- Avionics inspectors may also acquire further endorsements to their AME licence allowing them to inspect and certify a broader range of aircraft and avionics systems.
- An AME licence can be obtained by fulfilling the education and training requirements as stated above and passing Transport Canada AME examinations.

Classified elsewhere

- *Aircraft Assemblers and Aircraft Assembly Inspectors* (9481)
- Aircraft mechanics and maintenance engineers who maintain and inspect aircraft structures, mechanical, hydraulic or propulsion systems (in 7315 *Aircraft Mechanics and Aircraft Inspectors*)
- Government airworthiness inspectors (in 2262 *Engineering Inspectors and Regulatory Officers*)

2251 Architectural Technologists and Technicians

Architectural Technologists and Technicians may work independently or provide technical assistance to professional architects and civil design engineers in conducting research, preparing drawings, architectural models, specifications and contracts and in supervising construction projects. Architectural Technologists and Technicians are employed by architectural and construction firms, governments and other industries.

Examples of titles classified in this unit group

Architectural Design Technician
Architectural Design Technologist
Architectural Technician
Architectural Technologist
Building Technologist, Residential

Main duties

Architectural Technologists and Technicians perform some or all of the following duties:

- Assist in the development of architectural designs
- Analyze building codes, by-laws, space requirements, site requirements and other technical documents and reports
- Prepare drawings, specifications, cost estimates and listings of quantities of material from conceptual drawings and instructions
- Construct architectural and display models
- Prepare contract and bidding documents
- May supervise drafters, technicians and technologists on the architectural team
- May supervise construction projects and co-ordinate, monitor and inspect work done by others.

Employment requirements

- Completion of a one to three-year college program in architectural technology or a related subject is usually required.
- Certification in architectural technology or in a related field through provincial associations of engineering/applied science technologists and technicians may be required by employers.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.
- A period of supervised work experience, usually two years, is required before certification.

Additional information

- There is mobility to other related occupations such as drafters, civil engineering technologists and technicians, construction estimators and construction inspectors.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Civil Engineering Technologists and Technicians* (2231)
- *Construction Estimators* (2234)
- *Construction Inspectors* (2264)
- *Construction Managers* (0711)
- *Drafting Technologists and Technicians* (2253)
- *Survey Technologists and Technicians* (2254)

2252 Industrial Designers

Industrial Designers conceptualize and produce designs for manufactured products. They are employed by manufacturing industries and private design firms or they may be self-employed.

Examples of titles classified in this unit group

Furniture Designer
Industrial Design Consultant
Industrial Designer
Industrial Products Designer
Package Designer
Product Designer

Main duties

Industrial Designers perform some or all of the following duties:

- Consult with client, engineers or production specialists to establish product requirements
- Analyze the intended use of product and user preferences
- Conduct research into cost, properties of production materials and methods of production
- Prepare design concepts, sketches or models for approval
- Prepare specifications and guidelines for production and construct prototype of design
- Consult with engineers and production staff during manufacturing stage.

Employment requirements

- A university degree in industrial design, architecture, engineering
  or
  A college diploma in industrial design is required.
- Creative ability, as demonstrated by a portfolio of work, is required.

Additional information

- There is mobility between positions in this group.
- Mobility is possible to other design occupations.

Classified elsewhere

- *Architectural Technologists and Technicians* (2251)
- *Graphic Designers and Illustrating Artists* (5241)
- *Interior Designers* (5242)
- *Theatre, Fashion, Exhibit and Other Creative Designers* (5243)
- Civil engineering design technologists (in 2231 *Civil Engineering Technologists and Technicians*)
- Electrical and electronics design technologists (in 2241 *Electrical and Electronics Engineering Technologists and Technicians*)
- Engineering design technicians and technologists, not elsewhere classified (in 2253, *Drafting Technologists and Technicians*)
- Mechanical engineering equipment designers (in 2232 *Mechanical Engineering Technologists and Technicians*)

2253 Drafting Technologists and Technicians

Drafting Technologists and Technicians prepare engineering designs, drawings and related technical information working independently, in multidisciplinary engineering teams or in support of engineers, architects or industrial designers. They are employed by consulting and construction companies, utility, resource and manufacturing companies, all levels of government and by a wide range of other establishments.

Examples of titles classified in this unit group

Architectural Draftsperson
Computer Aided Design and Drafting Technologist
Computer Aided Drafting Technician
Design and Drafting Technologist
Drafting Technician
Drafting Technologist
Draftsperson
Electrical Draftsperson
Electro-mechanical Draftsperson
Electronic Draftsperson
Engineering Design and Drafting Technologist
Mechanical Draftsperson
Structural Draftsperson
Supervisor, Drafting Office
Technical Illustrator

Main duties

Drafting Technologists perform some or all of the following duties:

- Develop and prepare engineering designs and drawings from preliminary concepts, sketches, engineering calculations, specification sheets and other data
- Operate computer aided design and drafting stations
- Develop and prepare design sketches
- Complete documentation packages and produce drawing sets
- Check and verify design drawings to conform to specifications and design data
- Write technical reports
- Prepare contracts and tender documents
- Prepare construction specifications, costs and material estimates
- Supervise and train other technologists, technicians and drafters.

Drafting Technicians perform some or all of the following duties:

- Develop and prepare engineering drawings, plans, diagrams or layouts from sketches
- Operate computer aided drafting equipment and/or a conventional drafting station
- Examine drawings to check for errors.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a two to three-year college program in engineering design and drafting technology, or in a related field is usually required for drafting and design technologists.
- Completion of a one to two-year college program in drafting
  or
  Completion of four-year apprenticeship training in drafting,
  or
  Four to five years of related experience plus completion of college or industry courses in drafting are usually required for drafting technicians.
- Certificate of qualification for draftspersons is available from provincial apprenticeship authorities, but is voluntary.
- Certification in engineering design and drafting technology or in a related field through provincial associations of engineering/applied science technologists and technicians may be required by employers.
- A period of supervised work experience, usually two years, is required before certification.

2253 Drafting Technologists and Technicians

Additional information

- Senior and supervisory drafting and design technology workers require experience.
- Mobility is possible to civil, mechanical, electrical or other engineering design technologies through educational or work specialization.

Classified elsewhere

- *Industrial Designers* (2252)
- Architectural design technologists (*in 2251 Architectural Technologists and Technicians*)
- Civil engineering design technologists (in 2231 *Civil Engineering Technologists and Technicians)*
- Electrical and electronics engineering design technologists (in 2241 *Electrical and Electronics Engineering Technologists and Technicians*)
- Mechanical engineering design technologists (*in 2232 Mechanical Engineering Technologists and Technicians*)

2254 Survey Technologists and Technicians

Survey Technologists and Technicians conduct or participate in surveys to determine the exact locations and relative positions of natural features and other structures on the earth's surface. They are employed by all levels of government and by private sector surveying establishments.

Examples of titles classified in this unit group

Engineering Survey Technologist
Geodetic Survey Technologist
Land Survey Technician
Legal Survey Technician
Survey Technician
Survey Technologist
Topographic Survey Technician
Transit Operator – Surveying

Main duties

Survey technologists perform some or all of the following duties:

- Assist survey engineers or professional surveyors to develop methods and procedures for conducting field surveys
- Conduct field surveys and operate survey instruments to measure distance, angles, elevations and contours
- Record measurements and other information obtained during field survey activities
- Analyze latitude, longitude and angles and compute trigonometrical and other calculations to plot features, contours and areas to a specific scale
- Prepare detailed drawings, charts and plans and survey notes and reports
- Supervise and co-ordinate field survey activities.

Survey technicians perform some or all of the following duties:

- Participate in field surveys and operate survey instruments and devices
- Keep records, measurements and other survey information in systematic order
- Assist in the calculation, analysis and computation of measurements obtained during field surveys
- Assist in the preparation of detailed drawings, charts and plans.

Survey technologists and technicians may specialize in one of the following types of surveys: geodetic survey, topographic survey, legal survey or engineering survey.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a two to three-year college program in survey technology is usually required for survey technologists.
- Completion of a one to two-year college program in survey technology is usually required for survey technicians.
- Apprenticeship training for survey technicians and technologists is available in New Brunswick.
- Certification by provincial associations of survey technicians and technologists may be required by some employers.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.

Additional information

- Mobility is possible between the various occupations in this unit group.

Classified elsewhere

- *Civil Engineering Technologists and Technicians* (2231)
- *Drafting Technologists and Technicians* (2253)
- *Geological and Mineral Technologists and Technicians* (2212)
- *Mapping and Related Technologists and Technicians* (2255)

2255 Mapping and Related Technologists and Technicians

This unit group includes technologists and technicians who design and prepare maps, interpret aerial photographs, operate airborne remote sensing equipment, and operate remote sensing interpretive equipment and geographical information systems. They are employed by all levels of government, private mapping companies, computer software companies and other related establishments.

Examples of titles classified in this unit group

Aerial Survey Technician
Cartographer
Cartographic Technician
Geographic Information System (GIS) Technician
GIS Technologist
Mapping Technician
Photogrammetric Technologist
Photogrammetrist
Remote Sensing (RS) Technician
RS Technologist

Main duties

Cartographic technologists and technicians perform some or all of the following duties:

- Plan map content, format and design and compile required data from aerial photographs, survey notes, records, reports and other maps
- Generate maps and related graphs and charts using digital mapping techniques, computer interactive graphics, traditional drafting methods and computer or traditional scribing tools
- Inspect final compositions to ensure completeness and accuracy.

Photogrammetric technologists and technicians perform some or all of the following duties:

- Examine and interpret aerial photographs to prepare topographic maps, aerial-photograph mosaics and related charts
- Operate stereoscopic plotting and computer graphics equipment to provide three-dimensional optical models of terrain, to trace maps, and to prepare charts and tables.

Aerial survey technologists and technicians perform some or all of the following duties:

- Operate airborne remote sensing equipment such as survey cameras, sensors and scanners which produce images of large areas of the earth or of the atmosphere for applications in forestry, geology, urban planning or other fields of science
- Monitor recording quality and adjust equipment as required and inspect quality of recorded images.

Remote sensing technologists and technicians perform some or all of the following duties:

- Operate analog or computer-based remote sensing interpretive equipment to prepare images, graphic and alphanumeric reports, maps and charts
- Develop specialized analog and computer software specific routines to customize and integrate image analysis
- Verify the integrity and accuracy of data contained in remote sensing image analysis systems.

Geographic information system (GIS) technologists and technicians perform some or all of the following duties:

- Operate computer-based spatially relatable information management equipment and peripheral equipment to prepare graphic and alphanumeric reports, maps and charts
- Develop specialized computer software routines to customize geographic information
- Perform data entry and editing activities and maintenance operations to systems following pre-determined calibration procedures.

2255 Mapping and Related Technologists and Technicians

Employment requirements

- Completion of secondary school is required.
- Technologists in this unit group require completion of a two to three-year college program in cartography, photogrammetry, aerial survey, remote sensing, geographic information system or a combination of some of these disciplines.
- Technicians in this unit group require completion of a one to two-year college program in cartography, photogrammetry, aerial survey, remote sensing or geographic information system.
- In Quebec, membership in the professional corporation for technologists in applied sciences is mandatory.

Additional information

- Mobility is possible between some occupations in this unit group.

Classified elsewhere

- *Drafting Technologists and Technicians* (2253)
- *Survey Technologists and Technicians* (2254)

2261 Nondestructive Testers and Inspectors

Nondestructive Testers and Inspectors operate radiographic, ultrasonic, liquid penetrant, magnetic particle, eddy current and similar testing equipment to detect discontinuities in objects of various compositions and materials. They are employed by quality control, maintenance and safety departments of manufacturing, processing, transportation, energy and other companies and by private industrial inspection establishments.

Examples of titles classified in this unit group

Acoustic Emission Technician
Boiler Tester
Eddy-Current Technician
Industrial Radiographer
Infra-Red Thermographer
Liquid Penetrant Technician
Magnetic Particle Technician
Maintenance Technician, NDT
Nondestructive Examiner
Nondestructive Inspector
Nondestructive Tester (NDT)
Pipe Inspector
Pressure Tester
Radiographic Technician
Ultrasonic Technician
Vibration Analysis Technician
Weld Inspector

Main duties

Nondestructive Testers and Inspectors perform some or all of the following duties:

- Conduct tests to ensure quality or detect discontinuities (defects) using ultrasonic, radiographic, liquid penetrant, magnetic particle, eddy current and other nondestructive testing methods
- Establish techniques for proper examination of object under inspection, ensuring strict adherence to safety regulations
- Interpret radiographs, CRT or digital readouts, conductivity meters and visual indicators
- Apply testing criteria in accordance with applicable specifications or standards and evaluate results
- Organize and report test results
- May instruct and supervise trainees.

Employment requirements

- Completion of secondary school
  or
  Completion of two years of engineering program at a college or university is required.
- Additional classroom and on-the-job training is required for certification in nondestructive testing.
- Nondestructive testing certification by the Canadian General Standards Board (CGSB) is available in three levels and may be required by employers.
- Industrial radiographers using a radioactive isotope require an operator's licence issued by the Atomic Energy Control Board.

Classified elsewhere

- *Engineering Inspectors and Regulatory Officers* (2262)
- Radiographic or ultrasonic equipment operating occupations in medical laboratories or hospitals (in minor group 321 *Medical Technologists and Technicians* (Except Dental Health))

2262 Engineering Inspectors and Regulatory Officers

Engineering Inspectors and Regulatory Officers inspect transportation vehicles such as aircraft, watercraft, automobiles and trucks and weighing and measuring devices such as scales and meters as well as industrial instruments, processes and equipment for conformity to government and industry standards and regulations. They are employed by government agencies and in the private sector.

Examples of titles classified in this unit group

Airworthiness Inspector
Elevator Inspector
Engineering Inspector
Inspector, Air Carrier Maintenance
Inspector, Air Transport
Inspector, Weights and Measures
Inspector, Electricity and Gas Meters
Insurance Loss Prevention Inspector
Marine Damage Surveyor
Motor Vehicles Defects Investigator
Railway Accident Investigation Officer
Regulatory Officer, Engineering

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Motor vehicles defects investigators conduct motor vehicle and motor vehicle component defect investigations, examinations, tests and defect-related accident investigations; provide expert advice and testimony on specific motor vehicle performance problems or defects and recommend improvements in vehicle inspection and licensing procedures and vehicle safety standards.
- Railway accident investigation officers collect and analyze data from train derailments, collisions, and other accidents to determine the causes and inspect and evaluate railway property, structures, rolling stock, signals, track structure and train handling characteristics to ensure compliance to operating standards.
- Airworthiness inspectors conduct initial and regular inspections of establishments and individuals holding or applying for air carrier operating certificates and establishments engaged in aircraft maintenance, repair or modification; inspect aircraft, advise of any deficiencies and detain aircraft suspected of being unairworthy or unsafe.
- Inspectors, weights and measures conduct inspections and tests of a variety of mechanical and electronic weighing and measuring devices and systems; prepare draft investigative reports of findings and recommend corrective or enforcement action.

Employment requirements

- University degree or college diploma in an appropriate engineering field
  or
  Trade qualifications and extensive related work experience are required.
- Appropriate professional engineering or engineering technology certification and licences may be required.

Classified elsewhere

- *Construction Inspectors* (2264)
- *Inspectors in Public and Environmental Health and Occupational Health and Safety* (2263)

2263 Inspectors in Public and Environmental Health and Occupational Health and Safety

Inspectors in this unit group investigate health and safety related complaints and inspect restaurants, food processing and industrial establishments, hotels, municipal water systems and other workplaces to ensure compliance with government regulations regarding sanitation, pollution control, the handling and storage of hazardous substances and workplace safety. They are employed throughout the private and public sectors.

Examples of titles classified in this group

Environmental Health Officer
Hazardous Waste Inspector
Health and Safety Officer
Health Standards Inspector
Occupational Health and Safety Officer
Pollution Control Inspector
Public Health Inspector
Restaurant Inspector
Rodent Control Officer
Supervisor, Public Health Inspectors
Water Inspector

Main duties

Inspectors in this unit group perform some or all of the following duties:

- Inspect the sanitary conditions of restaurants, hotels, schools, hospitals and other public facilities or institutions and investigate outbreaks of diseases and poisonings resulting from spoiled food supplies
- Conduct surveys and monitoring programs of the natural environment to identify sources of pollution
- Investigate spills of hazardous chemicals or products which may pose a risk to human health or the natural environment and collect samples of water or other materials for analysis
- Inspect workplaces to ensure that equipment, materials and production processes do not present a safety or health hazard to employees or to the general public; investigate workplace accidents or illnesses
- Initiate enforcement procedures to fine or to close an establishment contravening municipal, provincial or federal regulations
- Provide information to employers, employees and the general public on issues of public health, environmental protection or workplace safety.

Employment requirements

- A bachelor's degree or college diploma in a discipline such as food science, environmental studies, chemistry or health and safety is usually required.
- In some establishments, several years of related work experience and the completion of in-house training courses may substitute for formal education.
- Public health inspectors employed outside Quebec require certification with the Canadian Institute of Public Health Inspectors.
- Occupational health and safety officers may require certification with the Association for Canadian Registered Safety Professionals.

Classified elsewhere

- *By-law Enforcement and Other Regulatory Officers, n.e.c.* (6463)
- *Construction Inspectors* (2264)
- *Engineering Inspectors and Regulatory Officers* (2262)

2264 Construction Inspectors

Construction Inspectors inspect the construction and maintenance of new and existing buildings, bridges, highways and industrial construction to ensure that specifications and building codes are observed and monitor worksite safety. They are employed by federal, provincial and municipal governments, construction companies, architectural and civil engineering consulting firms or they may be self-employed.

Examples of titles classified in this unit group

Bridge Inspector
Building Construction Inspector
Construction Inspector
Electrical Inspector
Highway Construction Inspector
Home Inspector
Housing Construction Inspector
Mine Inspector, Construction
Plumbing Inspector
Pre-stressed Concrete Inspector
Safety Officer, Construction

Main duties

Construction Inspectors perform some or all of the following duties:

- Examine plans, drawings, and site layouts for new buildings, building renovations and other proposed structures
- Inspect construction of buildings, bridges, dams, highways and other types of building and engineering construction for conformance to drawings , specifications, building codes or other applicable ordinances
- Inspect and test electrical or plumbing installations in buildings to ensure compliance with municipal, provincial and federal regulations
- Inspect steel framework, concrete forms, reinforcing steel mesh and rods, concrete or pre-stressed concrete to ensure quality standards and to verify conformance to specifications and building codes
- Inspect construction of sewer systems and pipelines
- Inspect construction sites to ensure that safe working conditions are maintained
- Inspect existing buildings to identify and report on structural defects, fire hazards and other threats to safety
- Inspect new or resale homes on behalf of clients and assess and provide reports on the physical condition of property.

Employment requirements

- Completion of secondary school is required.
- College diploma in construction, civil engineering or architectural technology plus several years of related work experience
  or
  Several years of experience as a qualified tradesperson in a construction trade, such as plumbing, carpentry or electrical trade are required.
- Provincial certification in a skilled trade or as an engineering technologist is usually required.

Additional information

- Progression to construction management positions is possible with experience.

Classified elsewhere

- *By-law Enforcement and Other Regulatory Officers, n.e.c.* (6463)
- *Construction Estimators* (2234)
- *Construction Managers* (0711)
- *Engineering Inspectors and Regulatory Officers* (2262)
- *Inspectors in Public and Environmental Health and Occupational Health and Safety* (2263)

2271 Air Pilots, Flight Engineers and Flying Instructors

Pilots fly fixed wing aircraft and helicopters to provide air transportation and other services. Flight engineers (second officers) monitor the functioning of aircraft during flight and may assist in flying aircraft. Flying instructors teach flying techniques and procedures to student and licensed pilots. Air pilots, flight engineers and flight instructors are employed by airline and air freight companies, flying schools, the armed forces and by other public and private sector aircraft operators.

Examples of titles classified in this unit group

Air Pilot
Check Pilot
Chief Flying Instructor
Chief Pilot
Co-pilot
Flight Engineer
Flying Instructor
Helicopter Pilot
Military Pilot
Pilot Instructor
Second Officer
Test Pilot

Main duties

Pilots perform some or all of the following duties:

- Fly fixed wing aircraft or helicopters to transport passengers and freight
- Provide services such as search and rescue, aerial surveying or spraying and crop dusting
- Direct activities of aircraft crew during flight, as captain of aircraft
- Co-pilot aircraft and perform captain's duties if required, as first officer
- Test new aircraft to evaluate aircraft performance
- Train pilots to use new equipment, or prepare them for examination to re-validate or upgrade existing licences.

Flight engineers (second officers) perform some or all of the following duties:

- Monitor operation of engines, fuel consumption and functioning of aircraft systems during flight
- Assist captain and first officer in operation of aircraft as second officer.

Flying instructors perform some or all of the following duties:

- Instruct student pilots in procedures and techniques of flying aircraft and in ground-school subjects such as navigation, radio procedures and flying regulations
- Train licensed pilots for additional certification.

Employment requirements

Pilots and Flight Engineers

- Completion of secondary school and graduation from a certified flying or aviation school are required.
- A commercial pilot's licence is required.
- Additional licences or endorsements to fly different types of aircraft are required for pilots.
- A university degree or college diploma may be required.
- Structured training may be provided by employers.

Flight Instructors

- Completion of secondary school and graduation from a certified flying or aviation school are required.
- A commercial pilot's licence is required.
- Transport Canada ratings and endorsements to provide instruction on different types of aircraft are required.
- A university degree or college diploma may be required.

2272 Air Traffic Control Occupations

Air traffic controllers direct air traffic within assigned airspace, and control moving aircraft and service vehicles at airports. Flight dispatchers authorize airline flights over assigned routes. Flight service specialists provide pilots with flight information essential to aviation safety. Air traffic controllers and flight service specialists are employed by the federal government including the armed forces. Flight dispatchers are employed by airline and air services companies and by the armed forces.

Examples of titles classified in this unit group

Air Traffic Control Chief
Air Traffic Controller
Flight Dispatcher
Flight Service Specialist
Tower Controller, Air Traffic

Main duties

Air traffic controllers perform some or all of the following duties:

- Control flow of air traffic within assigned airspace using radar monitors, radio and other communication equipment and visual references
- Issue aircraft takeoff and landing instructions to pilots and relay meteorological, navigational and other information to pilots in flight
- Maintain radio and telephone contact with adjacent control towers, terminals and other control centres and co-ordinate movement of planes into adjoining areas
- Alert airport emergency services when aircraft are experiencing difficulties and report missing aircraft to search and rescue services
- Direct activities of all moving aircraft and service vehicles on or near airport runways.

Flight dispatchers perform some or all of the following duties:

- Analyze environmental conditions and assess aircraft for load and fuel capacity and other factors to determine flight routes
- Brief flight crew before takeoff on weather conditions, status of navigational facilities and airports en route
- Co-sign flight authorization with aircraft captain
- Monitor progress of flight and communicate as required with aircraft during flight
- Delay or cancel flights if conditions warrant
- Prepare and maintain flight plans, flight logs and other reports.

Flight service specialists perform some or all of the following duties :

- Provide pre-flight information concerning weather, radio frequencies, terrain, airports and related data to assist pilots in preparation of flight plans
- Check flight plans for completeness and accuracy and forward plans to air traffic control unit or notify aircraft destinations of flight plans
- Respond to radio calls from aircraft preparing for takeoff or landing and supply information such as weather conditions, wind speed and direction and presence of local air traffic
- Support air traffic control operations by relaying radio requests for flight clearances, arrival and departure information and position reports.

Employment requirements

- Completion of secondary school is required.
- A basic radio telephone operator's licence is required.
- Air traffic controllers and flight service specialists require completion of a Transport Canada training program which includes structured in-class and on-the-job training.
- Air traffic controllers require an air traffic controller's licence.
- Flight dispatchers may require experience in air traffic control or flight operations and may require a private pilot's licence.

Additional Information

- Air traffic controllers with experience and appropriate Transport Canada endorsements may move to airports with higher volume air traffic.

Classified elsewhere

- *Railway and Marine Traffic Controllers* (2275)

2273 Deck Officers, Water Transport

Deck Officers, Water Transport operate ships or self-propelled vessels to transport passengers and cargo on oceans and coastal and inland waters, and supervise and co-ordinate the activities of deck crews. This unit group also includes Canadian Coast Guard deck officers. They are employed by marine transportation companies and federal government departments including the armed forces.

Examples of titles classified in this unit group

Deck Officer
Ferryboat Master
First Mate, Ship
Master Mariner
Maritime Surface and Sub-surface Officer – Military
Navigation Officer, Coast Guard Vessel
Second Mate, Ship
Ship's Captain
Ship's Mate
Ship Pilot
Third Mate, Ship
Tugboat Captain
Watchkeeping Officer, Coast Guard Vessel

Main duties

Deck officers perform some or all of the following duties:

- Command and operate ships or other self-propelled vessels, such as barges or oil rigs, to transport passengers and cargo
- Command and operate coast guard vessels to provide ice breaking and search and rescue services and to maintain control over ships operating in Canadian waters
- Plan and execute safe navigational passage using navigational aids
- Determine geographical position using navigational instruments, maps and charts
- Guide vessels in rivers, canals, and other confined or hazardous waters and waterways
- Maintain vessel's navigational instruments and equipment
- Direct and oversee loading and unloading of cargo
- Supervise and co-ordinate activities of deck crews
- Record vessel's progress, crew's activities, weather and sea conditions on ship's log.

Employment requirements

- Completion of secondary school is required.
- Completion of deck officer cadet program from an approved nautical institute
  or
  One to three years of experience as a member of a deck crew are required.
- Deck officer certificate of competency, issued by Transport Canada, is required.

Additional information

- Transport Canada administers a deck officer certification program, consisting of several levels. Progression from one level of certification to the next requires additional experience, training and testing.
- Mobility between employers is possible for positions requiring the same level of certification.
- Progression to management positions in transportation is possible with experience.

Classified elsewhere

- *Deck Crew, Water Transport* (7433)
- *Engineer Officers, Water Transport* (2274)
- *Engine Room Crew, Water Transport* (7434)
- *Fishing Masters and Officers* (8261)
- Shore captains (in 0713 *Transportation Managers*)

2274 Engineer Officers, Water Transport

Engineer Officers, Water Transport operate and maintain main engines, machinery and auxiliary equipment aboard ships and other self-propelled vessels and supervise and co-ordinate the activities of engine room crews. They are employed by marine transportation companies and federal government departments including the armed forces.

Examples of titles classified in this unit group

Chief Engineer
Engineer Officer
Fourth Engineer
Marine Engineer Officer
Marine Engineer Officer – Military
Second Engineer
Third Engineer
Tugboat Engineer

Main duties

Engineer Officers, Water Transport perform some or all of the following duties:

- Operate main engines, machinery and all auxiliary equipment aboard ships, such as boilers, steering and deck machinery, motors, pumps, generators and condensers
- Stand engine room watch, monitoring and noting performance of engines, machinery and all auxiliary equipment
- Inspect and conduct maintenance and emergency repair to engines, machinery and all auxiliary equipment
- Supervise and co-ordinate activities of engine room crew
- Maintain records and prepare reports on engine performance and failures.

Employment requirements

- Completion of secondary school is required.
- Completion of three-year cadet program in marine engineering from an approved marine training institute
  or
  Approximately three years of experience as an engine room crew member and six months of formal training at an approved marine training institute
  or
  Approximately three years of experience as an engine mechanic and six months of experience as an engine room crew member are required for certification as a fourth class marine engineer.
- A marine engineer officer certificate of competency, issued by Transport Canada, is required.

Additional information

- Fourth Class Marine Engineer certificate is the entry level of a four-level certification program administered by Transport Canada. Progression from one level of certification to the next requires additional experience, training and testing.
- Mobility between employers is possible for positions requiring the same level of certification.
- Progression to management positions in transportation is possible with experience.

Classified elsewhere

- *Deck Officers, Water Transport* (2273)
- *Deck Crew, Water Transport* (7433)
- *Engine Room Crew, Water Transport* (7434)
- *Transportation Managers* (0713)
- Marine and naval engineers (in 2148 *Other Professional Engineers, n.e.c.*)
- Marine mechanical engineers (in 2132 *Mechanical Engineers*)

2275 Railway and Marine Traffic Controllers

Railway traffic controllers co-ordinate passenger and freight train traffic on railways. They are employed by rail transport companies. Marine traffic controllers monitor and regulate coastal and inland marine traffic within assigned waterways. They are employed by port, harbour, canal and lock authorities and by the Canadian Coast Guard.

Examples of titles classified in this unit group

Chief Train Dispatcher
Marine Traffic Controller
Marine Traffic Regulator
Rail Traffic Controller
Train Dispatch Operator
Train Dispatcher
Train Operator

Main duties

Railway traffic controllers perform some or all of the following duties:

- Operate and monitor centralized traffic control systems to co-ordinate and follow railway traffic
- Chart train movements, calculate arrival and departure times and record rail traffic information
- Issue train orders to control the movement of passenger and freight train traffic and on-track mobile maintenance equipment
- Receive, record and relay train orders to train crew by hand or radio telephone
- May supervise and train other railway traffic controllers.

Marine traffic controllers perform some or all of the following duties:

- Direct and monitor vessel movements using radar or closed circuit monitors, remote radio systems and other telecommunication equipment
- Obtain position, course, speed and estimated arrival time of vessels and monitor vessel progress through traffic zone
- Issue clearance instructions to vessels, advise vessels of traffic volumes and weather conditions, and relay information to next marine traffic control sector
- Report accidents, distress signals, navigational hazards and other emergencies to authorities
- Maintain radio and telephone contact with adjacent marine control sectors and with vessels within area of jurisdiction
- Maintain log of vessel movements, size and structure.

Employment requirements

- Railway traffic controllers usually require completion of secondary school and several years of experience in railway industry.
- Up to six weeks of classroom and on-the-job training is provided to railway traffic controllers.
- Railway traffic controllers who are train dispatchers require Level "A" Certificate of the Canadian Rail Operating Rules.
- Railway traffic controllers who are train operators require Level "B" Certificate of the Canadian Rail Operating Rules.
- Marine traffic controllers require completion of secondary school and several months of formal traffic controller training.

Additional information

- With experience and certification, train operators may progress to train dispatcher positions.
- With experience, railway traffic controllers may progress to supervisory positions in rail transport operations.
- There is little mobility between traffic controlling occupations in the railway and marine sectors.

Classified elsewhere

- *Supervisors, Railway Transport Operations* (7221)
- Subway traffic controllers and light rail transit dispatchers (in 7222 *Supervisors, Motor Transport and Other Ground Transit Operators)*

Major Group 31
PROFESSIONAL OCCUPATIONS IN HEALTH

311 Physicians, Dentists and Veterinarians

3111 Specialist Physicians
3112 General Practitioners and Family Physicians
3113 Dentists
3114 Veterinarians

312 Optometrists, Chiropractors and Other Health Diagnosing and Treating Professionals

3121 Optometrists
3122 Chiropractors
3123 Other Professional Occupations in Health Diagnosing and Treating

313 Pharmacists, Dietitians and Nutritionists

3131 Pharmacists
3132 Dietitians and Nutritionists

314 Therapy and Assessment Professionals

3141 Audiologists and Speech-Language Pathologists
3142 Physiotherapists
3143 Occupational Therapists
3144 Other Professional Occupations in Therapy and Assessment

315 Nurse Supervisors and Registered Nurses

3151 Head Nurses and Supervisors
3152 Registered Nurses

Major Group 32
TECHNICAL AND SKILLED OCCUPATIONS IN HEALTH

321 Medical Technologists and Technicians (Except Dental Health)

3211 Medical Laboratory Technologists and Pathologists' Assistants
3212 Medical Laboratory Technicians
3213 Animal Health Technologists
3214 Respiratory Therapists and Clinical Perfusionists
3215 Medical Radiation Technologists
3216 Medical Sonographers
3217 Cardiology Technologists
3218 Electroencephalographic and Other Diagnostic Technologists, n.e.c.
3219 Other Medical Technologists and Technicians (Except Dental Health)

322 Technical Occupations in Dental Health Care[5]

3220 Dental Technicians and Laboratory Bench Workers
3221 Denturists
3222 Dental Hygienists and Dental Therapists
3223 Dental Technicians

323 Other Technical Occupations in Health Care (Except Dental)

3231 Opticians
3232 Midwives and Practitioners of Natural Healing
3233 Registered Nursing Assistants
3234 Ambulance Attendants and Other Paramedical Occupations
3235 Other Technical Occupations in Therapy and Assessment

Major Group 34
ASSISTING OCCUPATIONS IN SUPPORT OF HEALTH SERVICES

341 Assisting Occupations in Support of Health Services[6]

3411 Dental Assistants
3412 Dental Laboratory Bench Workers
3413 Nurse Aides and Orderlies
3414 Other Aides and Assistants in Support of Health Services

[5] In data provided by Statistics Canada, unit groups 3223 and 3412 are combined to form *3220 Dental Technicians and Laboratory Bench Workers*. Hence, Statistics Canada data for major group 32 and for minor group 322 includes unit group 3412.
[6] In data provided by Statistics Canada, unit groups 3223 and 3412 are combined to form *3220 Dental Technicians and Laboratory Bench Workers*. Hence, Statistics Canada data for major group 34 and for minor group 341 does not include unit group 3412.

3111 Specialist Physicians

This unit group includes specialist physicians in clinical medicine, in laboratory medicine and in surgery. Specialists in clinical medicine diagnose and treat diseases and physiological or psychiatric disorders and act as consultants to other physicians. Specialists in laboratory medicine study the nature, cause and development of diseases in humans. Specialists in surgery perform and supervise surgical procedures. Specialists in clinical medicine usually work in private practice or in a hospital while those in laboratory medicine and in surgery usually work in hospitals. Residents and interns in training to become specialist physicians are included in this unit group.

Examples of titles classified in this unit group

Specialists in Clinical Medicine

Anaesthetist
Cardiologist
Dermatologist
Endocrinologist
Gastrœnterologist
Geriatrician
Nephrologist
Neurologist
Paediatrician
Physiatrist
Psychiatrist
Radiation Oncologist
Rheumatologist

Specialists in Laboratory Medicine

Anatomical Pathologist
General Pathologist
Haematological Pathologist
Medical Biochemist
Medical Microbiologist
Neuropathologist

Specialists in Surgery

Cardiovascular and Thoracic Surgeon
General Surgeon
Gynaecologist
Neurosurgeon
Obstetrician
Ophthalmologist
Orthopaedic Surgeon
Otolaryngologist
Plastic Surgeon
Thoracic Surgeon
Urologist

Main duties

Specialists in clinical medicine perform some or all of the following duties:

- Diagnose and treat diseases and physiological or psychiatric disorders
- Order laboratory tests, x-rays and other diagnostic procedures
- Prescribe medication and treatment and refer patients for surgery
- Act as consultants to other physicians
- May conduct medical research.

Specialists in laboratory medicine perform some or all of the following duties:

- Study the nature, cause and development of diseases in humans and the structural and functional changes caused by diseases
- Conduct microscopic and chemical analyses of laboratory samples and specimens
- Supervise laboratory activities
- Act as consultants to other physicians.

Specialists in surgery perform some or all of the following duties:

- Assess patients' diseases or disorders to determine appropriate surgical procedures
- Perform and supervise surgical procedures to correct physical abnormalities and deficiencies and repair injuries
- Act as consultants to other physicians.

3111 Specialist Physicians

Employment requirements

All specialist physicians require

- A Bachelor of Science degree or, in Quebec, completion of college program in health science and one year of pre-medicine university studies
  and
  Graduation from an approved medical school
  and
  Specific specialty training (see below)
  and
  Completion of the qualifying examinations of the Royal College of Physicians and Surgeons of Canada
  and
  Licensure by the provincial or territorial licensing authority.
- In Quebec, membership in the professional corporation for physicians is mandatory.

Specialists in clinical medicine require

- A one to two-year internship (except Quebec)
  and
  Three to four years of specialty residency training.
- Two years of subspecialty training may also be required.

Specialists in laboratory medicine require

- A one to two-year internship
  and
  Four years of specialty residency training.

Specialists in surgery require

- A one to two-year internship
  and
  Four to five years of specialty residency training.
- Two years of subspecialty training may also be required.

Additional information

- Progression to management positions, such as director of laboratory medicine or chief of surgery, is possible with experience.

Classified elsewhere

- *Chiropractors* (3122)
- *General Practitioners and Family Physicians* (3112)
- *Managers in Health Care* (0311)
- Naturopathic physicians and osteopathic physicians (in 3123 *Other Professional Occupations in Health Diagnosing and Treating*)

3112 General Practitioners and Family Physicians

General Practitioners and Family Physicians diagnose and treat the diseases, physiological disorders and injuries of patients. They usually work in private practice. Residents and interns in training to be general practitioners and family physicians are included in this unit group.

Examples of titles classified in this unit group

Family Physician
General Practitioner (GP)
Intern, General Practice
Medical Doctor (MD)
Resident Physician, General Practice

Main duties

General Practitioners and Family Physicians perform some or all of the following duties:

- Examine patients, order laboratory tests, X-rays and other diagnostic procedures and consult with other medical practitioners to evaluate patients' health
- Prescribe and administer medications and treatments
- Perform and assist in routine surgery
- Inoculate and vaccinate patients
- Deliver babies and provide pre-natal and post-natal care
- Advise patients on health care
- Report births, deaths and contagious diseases to governmental authorities.

Employment requirements

- A Bachelor of science degree, or, in Quebec, completion of college program in health science and one year of pre-medicine university studies
  and
  Graduation from an approved medical school
  and
- One to two-year internship or two to three years of family medicine residency training are required.
- Completion of the qualifying examinations of the Medical Council of Canada is required.
- Licensure by the provincial or territorial licensing authority is required.
- In Quebec, membership in the professional corporation for physicians is mandatory.

Additional information

- General practitioners and family physicians may become specialist physicians with additional training.

Classified elsewhere

- Chiropractors (3123)
- Specialist Physicians (3111)
- Naturapathic physicians and osteopathic physicians (in 3123 Other Professional Occupations in Health Diagnosing and Treating)

3113 Dentists

Dentists diagnose and treat disorders of the teeth and mouth. They work in private practice or may be employed in hospitals, clinics, public health facilities or universities.

Examples of titles classified in this unit group

Dentist
Endodontist
General Practice Dentist
Oral Pathologist
Oral Radiologist
Oral Surgeon
Orthodontist
Pediatric Dentist
Periodontist
Prosthodontist
Public Health Dentist

Main duties

Dentists perform some or all of the following duties:

- Examine patients' teeth, gums and surrounding tissue to diagnose disease, injury and decay and plan appropriate treatment
- Restore, extract and replace diseased and decayed teeth
- Perform oral surgery, periodontal surgery and other treatments
- Clean teeth and instruct patients on oral hygiene
- Design bridgework, fit dentures and provide appliances to correct abnormal positioning of the teeth and jaws, or write fabrication instructions or prescriptions for use by denturists and dental technicians
- Supervise dental hygienists, dental assistants and other staff.

Dentists may specialize in such areas as oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontics, endodontics, prosthodontics, oral pathology, oral radiology or public health dentistry.

Employment requirements

- One to four years of pre-dental university studies, or, in Quebec, completion of a college program in sciences
  and
  A university degree from a recognized dental program are required.
- Licensure by a provincial or territorial governing body is required.
- Dentists in general practice can move into a specialized practice through advanced training.
- Licensing for specializations is required.
- In Quebec, membership in the professional corporation for dentists is mandatory.

Additional information

- Certification by the National Dental Examining Board of Canada entitles dentists or graduates of approved dental programs to practise dentistry in any province in Canada provided requirements set out by the provincial and territorial licensing authorities are met.

Classified elsewhere

- *Dental Assistants* (3411)
- *Dental Hygienists and Dental Therapists* (3222)
- *Dental Technicians* (3223)
- *Denturists* (3221)

3114 Veterinarians

Veterinarians prevent, diagnose and treat diseases and disorders in animals and advise clients on the feeding, hygiene, housing and general care of animals. Veterinarians work in private practice or may be employed by animal clinics and laboratories, government or industry.

Examples of titles classified in this unit group

Small Animal Veterinary Specialist
Veterinarian
Veterinary Inspector
Veterinary Pathologist
Veterinary Physiologist
Zoo Veterinarian

Main duties

Veterinarians perform some or all of the following duties:

- Diagnose diseases or abnormal conditions in animals through physical examinations or laboratory tests
- Treat sick or injured animals by prescribing medication, setting bones, dressing wounds or performing surgery
- Inoculate animals to prevent diseases
- Advise clients on feeding, housing, breeding, hygiene and general care of animals
- May supervise animal health technologists and animal care workers
- May be responsible for overall operation of animal hospital, clinic or mobile service to farms
- May conduct veterinary research
- May enforce government regulations in disease control and food production including animal or animal-based food inspection.

Employment requirements

- Two to four years of pre-veterinary university studies or, in Quebec, completion of a College program in health science
  and
  A four-year university degree in veterinary medicine
  and
  Completion of national certification examinations are required.
- Provincial licensure is required.
- In Quebec, membership in the professional corporation for veterinarians is mandatory.
- Entry into research positions may require post-graduate study.

Additional information

- The duties of veterinarians performing research may be similar to those of some biologists.

Classified elsewhere

- *Animal Health Technologists* (3213)
- *Biologists and Related Scientists* (2121)

3121 Optometrists

Optometrists examine eyes, prescribe and fit eyeglasses and contact lenses and recommend treatments such as exercises to correct vision problems or ocular disorders. They work in private practice and in clinics and community health centres.

Examples of titles classified in this unit group

Doctor of Optometry (OD)
Optometrist

Main duties

Optometrists perform some or all of the following duties:

- Examine patients' eyes, conduct tests and use ophthalmoscopes, biomicroscopes and other specialized instruments to determine visual efficiency
- Prescribe treatment (excluding surgery) to conserve, improve and correct vision and other ocular disorders
- Prescribe and fit eyeglasses and contact lenses, counsel patients on contact lens use and care, visual hygiene, lighting arrangements, working distances and safety factors
- Refer patients to ophthalmologists or other physicians and surgeons when ocular or other diseases are found.

Optometrists may specialize in fitting visual aids for people who are partially blind, fitting contact lenses or correcting special vision problems.

Employment requirements

- One to three years of college or university, with a concentration in mathematics and science courses
  and
  A four-year university program in optometry
  are required.
- Licensure by the provincial or territorial governing body is required.
- In Quebec, membership in the professional corporation for optometrists is mandatory.

Classified elsewhere

- Orthoptists (in 3123 *Other Professional Occupations in Health Diagnosing and Treating*)
- *Opticians* (3231)
- Ophthalmologists (in 3111 *Specialist Physicians*)

3122 Chiropractors

Chiropractors diagnose and treat patients' disorders of the spine and other body joints by adjusting the spinal column or through other corrective manipulation. Chiropractors are usually in private practice.

Examples of titles classified in this unit group

Chiropractor
Chiropractic Doctor
Doctor of Chiropractic (D.C.)

Main duties

Chiropractors perform some or all of the following duties:

- Take patient's case history, conduct examination, observe patient and perform or order x-rays and other tests to diagnose patient's condition
- Diagnose disorders of the spine and other body joints
- Treat those patients whose symptoms result from abnormal musculoskeletal conditions or joint mechanics through the corrective manipulation of the spinal column or other joints and may use such additional treatments as heat, light and massage
- Advise patients on corrective exercises, lifestyle and nutrition.

Employment requirements

- Two years of university undergraduate studies in sciences
  and
  Completion of a four-year program at an accredited chiropractic college
  and
  Completion of the examinations of the Canadian Chiropractic Examining Board and of the provincial licensing body are required.
- Provincial licensure is required.
- In Quebec, membership in the professional corporation for chiropractors is mandatory.

Classified elsewhere

- Chiropractic aides (in 6631 *Elemental Medical and Hospital Assistants*)

3123 Other Professional Occupations in Health Diagnosing and Treating

This unit group includes health professionals who diagnose and treat the diseases and injuries of patients and who are not elsewhere classified. This includes podiatrists and chiropodists, naturopaths, orthoptists and osteopaths. They work in private practices, in clinics and hospitals.

Examples of titles classified in this unit group

Chiropodist
Foot Specialist
Naturopath
Orthoptist
Osteopath
Podiatrist

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Podiatrists and chiropodists diagnose diseases, deformities and injuries of the human foot and treat patients using braces, casts, shields, splints, physical therapy, medications or surgery.
- Naturopaths diagnose patients' diseases and disorders and employ natural methods of healing such as acupuncture and acupressure, spinal manipulation, reflexology, hydrotherapy, herbal medicines, biochemical therapy, nutritional therapy, homeopathy and psychological therapy in their treatment.
- Orthoptists assist ophthalmologists in the diagnosis and treatment of eye disorders by performing specialized eye tests to measure and assess defective binocular vision or abnormal eye movement in patients and prescribing treatment such as eye exercises or patching regimens.
- Osteopaths diagnose disorders and injuries of the musculo-skeletal, circulatory and nervous systems and treat patients with manipulative therapy, medications or surgery.

Employment requirements

Podiatrists and Chiropodists

- Podiatrists require completion of a four-year degree program in podiatric medicine
  and
  A one to three-year internship. These qualifications are obtained abroad.
- Chiropodists usually require completion of a degree program in chiropody, obtained abroad. In some provinces, completion of a three-year college diploma program in chiropody is also accepted.
- A license for podiatrists and chiropodists is required in New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia. The title given official recognition varies between provinces with podiatrist being more widely recognized.

Naturopaths

- A university degree in science is required.
- Completion of a university program in naturopathic medicine, obtained abroad
  or
  A four-year program in naturopathic medicine from a private institute is required.
- A license is required in Ontario, Manitoba, Saskatchewan and British Columbia.

Orthoptists

- Two years of post-secondary education with a specialization in science
  and
  A two-year hospital-based training program in orthoptics and supervised practical training are required.
- Certification with the Canadian Orthoptic Council is available but is only required in Quebec.

3123 Other Professional Occupations in Health Diagnosing and Treating

Osteopaths

- A university degree is required.
- A four-year program in osteopathic medicine *and*
  one year of internship are required. These qualifications are obtained abroad.
- A license is required in Quebec, Ontario, Saskatchewan, Alberta and British Columbia.

Additional information

- Osteopaths may obtain a license as general practitioners.

Classified elsewhere

- *Chiropractors* (3122)
- *Specialist Physicians* (3111)
- *General Practitioners and Family Physicians* (3112)
- *Midwives and Practitioners of Natural Healing* (3232)

3131 Pharmacists

Community pharmacists and hospital pharmacists compound and dispense prescribed pharmaceuticals. They are employed in community and hospital pharmacies. Industrial pharmacists participate in the research, development and manufacture of pharmaceutical products. They are employed in pharmaceutical firms and government departments and agencies. Pharmacists who are managers of pharmacies are included in this group.

Examples of titles classified in this unit group

Clinical Pharmacist
Community Pharmacist
Druggist
Hospital Pharmacist
Industrial Pharmacist
Pharmacist
Retail Pharmacist

Main duties

Community pharmacists and hospital pharmacists perform some or all of the following duties:

- Check prescriptions for proper dosage
- Compound prescribed pharmaceutical products by calculating, measuring and mixing the quantities of drugs and other ingredients required and filling appropriate containers with correct quantity
- Dispense prescribed pharmaceuticals to customers or to other health care professionals and advise them on the administration, uses and effects of the medication, drug incompatibilities and contra-indications
- Maintain medication profiles of customers including registry of poisons and narcotic and controlled drugs
- Ensure proper storage of vaccines, serums, biologicals and other pharmaceutical products to prevent deterioration
- Order and maintain stock of pharmaceutical supplies
- Advise customers on selection and use of nonprescription medication
- May supervise and co-ordinate the activities of other pharmacists, pharmacy assistants, pharmacy technicians and other staff.

Industrial pharmacists perform some or all of the following duties:

- Participate in basic research work for the development of new drugs
- Formulate new drug products developed by medical researchers
- Test new drug products for stability and to determine their absorption and elimination patterns
- Co-ordinate clinical investigations of new drugs
- Control the quality of drug products during production to ensure that they meet standards of potency, purity, uniformity, stability and safety
- Develop informational materials concerning the uses and properties of particular drugs
- Evaluate labelling, packaging and advertising of drug products.

Employment requirements

- A Bachelor of Science degree in pharmacy is required.
- Community and hospital pharmacists also require practical training under the supervision of a pharmacist.
- Licensure is required in all provinces and territories for community and hospital pharmacists.
- In Quebec, membership in the professional corporation for pharmacists is mandatory.
- Experience as a pharmacist is usually required for managers of pharmacies or of pharmacy departments.

Classified elsewhere

- *Chemists* (2112)
- Pharmaceutical sales representatives (in 6221 *Technical Sales Specialists, Wholesale Trade*)
- Pharmacologists (in 2121 *Biologists and Related Scientists*)
- Pharmacy assistants (in 3414 *Other Aides and Assistants in Support of Health Services*)

3132 Dietitians and Nutritionists

Dietitians and Nutritionists plan, organize, conduct and supervise programs in nutrition, diet and food service. They are employed in a variety of settings including hospitals, nursing homes, government, industry, and educational institutions or they may be self-employed.

Examples of titles classified in this unit group

Administrative Dietitian
Clinical Dietitian
Community Dietitian
Consultant Dietitian
Dietary Supervisor
Dietitian
Nutrition and Dietetics Researcher
Nutritionist
Public Health Nutritionist
Registered Dietitian
Registered Nutritionist

Main duties

Dietitians and Nutritionists perform some or all of the following duties:

- Develop, administer and supervise nutrition and food preparation and service programs in hospitals, nursing homes, schools, company cafeterias or similar settings
- Provide nutrition counselling and consulting to health professionals, dietetic interns, community groups, government, media and individuals
- Plan, evaluate and conduct nutrition education programs and develop educational materials for students and the general public
- Participate on health care teams to determine nutritional needs of patients and to plan therapeutic diets and menus
- Study and analyze current scientific nutritional studies and conduct research to improve the nutritional value, taste, appearance and preparation of food.

Dietitians and nutritionists may specialize in such areas as administrative dietetics, clinical dietetics, community dietetics or research dietetics.

Employment requirements

- Dietitians require a master's or bachelor's degree in dietetics, nutrition or a related field such as food and nutritional science or biochemistry
  and
- One to two years of supervised practical training
  and
- Registration with the Canadian Dietetic Association or a provincial counterpart.
- In Quebec, membership in the professional corporation for dietitians is mandatory.
- Nutritionists usually require the same education and training as dietitians.
- Registration with the Canadian Dietetic Association or a provincial counterpart is available for nutritionists who have the same education and practical training as dietitians.

Additional information

- Dietitians and nutritionists may progress to management positions through additional experience.

Classified elsewhere

- *Food Service Supervisors* (6212)
- Home economists (in 4164 *Social Policy Researchers, Consultants and Program Officers*)
- Managers of dietetic or nutrition departments (in 0311 *Managers in Health Care*)

3141 Audiologists and Speech-Language Pathologists

Audiologists diagnose, evaluate and treat hearing disorders. Speech-language pathologists diagnose, evaluate and treat speech, language and voice disorders. Audiologists and speech-language pathologists are employed in hospitals, community health agencies and educational institutions and may work in private practice.

Examples of titles classified in this unit group

Audiologist
Certified Audiologist
Clinical Audiologist
Clinical Pathologist, Speech-Language
Educational Audiologist
Language Pathologist
Research Audiologist
Research Pathologist, Speech-Language
Speech and Hearing Clinician
Speech-Language Pathologist
Speech Therapist

Main duties

Audiologists perform some or all of the following duties:

- Administer audiometric tests to diagnose and evaluate the degree and type of hearing impairment
- Plan and implement rehabilitation programs for patients, including selection and fitting of hearing aids, speech (lip) reading and counselling
- Consult with physicians, nurses, psychologists and other health care personnel to help plan treatment programs
- Conduct research related to hearing
- Instruct audiology students and other health care personnel in audiology.

Speech-Language Pathologists perform some or all of the following duties:

- Administer tests and observe patients to diagnose and evaluate speech, language and voice disorders
- Plan and implement remedial programs to correct speech, language and voice disorders
- Consult with physicians, nurses, psychologists and other health care personnel to help plan treatment programs
- Conduct research on speech and other communication disorders and on the development and design of diagnostic procedures and devices.

Employment requirements

- Audiologists and speech-language pathologists require a bachelor's degree in communication disorders, psychology, linguistics or a related field.
- Audiologists require a master's degree in audiology.
- Speech-language pathologists usually require a master's degree in speech-language pathology.
- Certification with the Canadian Audiology and Speech-Language Pathology Association may be required.
- Provincial licensure is required for audiologists and speech-language pathologists in New Brunswick, Quebec and Manitoba.
- In Quebec, membership in the professional corporation for speech therapists and audiologists is mandatory.

Additional information

- Progression into management positions such as chief audiologist or director of speech-language pathology is possible with experience.

Classified elsewhere

- *Managers in Health Care* (0311)
- Audiology and speech-language technical and assisting occupations (in 3235 *Other Technical Occupations in Therapy and Assessment*)

3142 Physiotherapists

Physiotherapists plan and carry out individually designed programs of physical treatment to maintain, improve or restore physical functioning, alleviate pain and prevent physical dysfunctioning in patients. Physiotherapists are employed in hospitals, clinics, rehabilitation centres and extended care facilities or they may be in private practice.

Examples of titles classified in this unit group

Physical Therapist
Physiotherapist
Registered Physiotherapist
Research Physiotherapist

Main duties

Physiotherapists perform some or all of the following duties:

- Assess patients' physical abilities through evaluative procedures such as functional ability tests
- Plan programs of physiotherapy
- Implement these programs, which may include therapeutic exercise, manipulations, massage, education, the use of electro-therapeutic and other mechanical equipment and hydro-therapy
- Maintain clinical and statistical records and confer with other health care professionals
- Develop and implement health promotion programs for patients, staff and the community
- May conduct research in physiotherapy
- May act as a physiotherapy consultant or educator.

Physiotherapists may focus their practice in particular clinical areas such as neurology, oncology, rheumatology, orthopaedics, obstetrics, paediatrics, geriatrics or in the treatment of patients with cardiovascular and cardiopulmonary disorders, burns or sports injuries.

Employment requirements

- A university degree in physiotherapy and a period of supervised practical training are required.
- Registration with provincial and territorial regulatory boards is required to practise physiotherapy.
- In Quebec, membership in the professional corporation for physiotherapists is mandatory.

Additional information

- Progression to management positions, such as director of physiotherapy, is possible through experience.

Classified elsewhere

- Directors of physiotherapy (in 0311 *Managers in Health Care*)
- Physical rehabilitation technicians (in 3235 *Other Technical Occupations in Therapy and Assessment*)

3143 Occupational Therapists

Occupational Therapists plan and carry out individually designed programs of activity for patients with physical or mental health problems to enhance their ability to care for themselves and to engage in work and recreational pursuits. Occupational Therapists are employed in health care institutions and schools and by social agencies.

Examples of titles classified in this unit group

Clinical Occupational Therapy Specialist
Community Occupational Therapist
Occupational Therapist (O.T.)
Research Occupational Therapist

Main duties

Occupational Therapists perform some or all of the following duties:

- Observe patients and consult physicians' prognoses to assess patients' emotional and physical capacities
- Develop treatment programs which may include manual and creative arts, industrial and vocational skills and recreational activities
- Implement the treatment programs and evaluate their progress
- Maintain clinical and statistical records
- May advise on health risks in the workplace or participate in other programs, such as pre-retirement programs, to prevent physical or mental health problems
- May conduct research in occupational therapy
- May act as an occupational therapy consultant or educator.

Occupational therapists may specialize in working with a specific age group, such as children or the elderly, or with clients who have a specific disability such as arthritis or schizophrenia.

Employment requirements

- A university degree in occupational therapy or rehabilitation, including a period of supervised practical training
  and
  Completion of the national certification examination are required.
- Licensure or registration by the provincial regulatory board is required.
- In Quebec, membership in the professional corporation for occupational therapists is mandatory.
- Occupational therapists may specialize in a particular area through additional training or experience.

Additional information

- Occupational therapists may progress to management positions, such as director of occupational therapy, through experience.

Classified elsewhere

- Directors of occupational therapy (in 0311 *Managers in Health Care*)

3144 Other Professional Occupations in Therapy and Assessment

This unit group includes specialized therapists not elsewhere classified who use techniques such as art, athletic, dance, music or recreational therapy or remedial gymnastics to aid in the treatment of mental and physical disabilities. They are employed by establishments such as hospitals, rehabilitation centres, clinics, recreational centres, nursing homes, educational institutions, prisons and day-care facilities or may work in private practice.

Examples of titles classified in this unit group

Art Therapist
Art Therapy Consultant
Athletic Therapist
Dance Therapist
Dance/Movement Therapy Researcher
Music Therapist
Music Therapy Researcher
Recreational Therapist
Remedial Gymnast

Main duties

Workers in professional occupations in therapy and assessment perform some or all of the following duties:

- Interview patients and review reports from physicians, psychiatrists, counsellors, teachers and others to determine patients' current and potential functioning level
- Prepare, either alone or in consultation with other health care professionals, a treatment plan for each patient
- Implement treatment plan by carrying out specialized therapy sessions employing techniques such as art, athletic, dance, music or recreational therapy or remedial gymnastics
- Observe and analyze patients during treatment sessions
- Record observations, write progress reports and consult with other health care professionals to evaluate treatment plan
- Initiate, design and implement specialized therapy programs for the general patient population or in the community
- May conduct research in their field of specialization.

Employment requirements

- Athletic therapists usually require a bachelor's degree in physical recreation with a specialization in sports medicine or a college program in sports injury management.
- Art therapists require a graduate degree in art therapy.
- Dance therapists require a bachelor's degree in psychology or dance/movement therapy
  or
  An approved graduate program in dance/movement therapy.
- Music therapists usually require a bachelor's degree or two-year college program in music therapy.
- Recreational therapists usually require a bachelor's degree or college program in recreation with a specialization in therapeutic recreation.
- Remedial gymnasts require completion of an approved college program in remedial gymnastics.
- Supervised practical training is usually required for occupations in this unit group.
- Creative or technical ability in the field of specialization is usually required.
- Accreditation or registration with the appropriate national professional association or provincial counterpart may be required.

Additional information

- There is no mobility between the different occupations in this unit group.

Classified elsewhere

- *Occupational Therapists* (3143)
- *Physiotherapists* (3142)
- Technical assistants in therapy and assessment (in 3235 *Other Technical Occupations in Therapy and Assessment*)

3151 Head Nurses and Supervisors

Head Nurses and Supervisors supervise and co-ordinate the activities of registered nurses, nursing assistants and other nursing personnel in the provision of patient care. They are employed in health care institutions such as hospitals, clinics and nursing homes and in nursing agencies.

Examples of titles classified in this unit group

Head Nurse
Nursing Care Co-ordinator
Nursing Supervisor
Nursing Unit Administrator
Patient Care Co-ordinator
Psychiatric Nursing Supervisor
Public Health Nursing Supervisor

Main duties

Head Nurses and Supervisors perform some or all of the following duties:

- Supervise registered nurses, nursing assistants and other nursing personnel
- Co-ordinate nursing services in conjunction with other health services
- Ensure quality nursing care is provided and appropriate administrative procedures are followed
- Assist in the establishment of unit policies and procedures
- Administer nursing unit budget and ensure that supplies and equipment are available
- Assist in the selection, evaluation and professional development of nursing personnel
- May provide direct patient care.

Employment requirements

- Completion of a university, college or other approved registered nursing program is required.
- Courses in management studies such as the Nursing Unit Administration Course offered by the Canadian Hospital Association or other degree, diploma, certificate or studies in management or administration may be required.
- Registration and licensure as a registered nurse by a provincial or territorial governing body or, in Manitoba, Saskatchewan, Alberta and British Columbia, provincial licensure as a registered psychiatric nurse is required.
- In Quebec, membership in the professional corporation for nurses is mandatory.
- Experience as a registered nurse is required.

Additional information

- Progression to management positions, such as director of nursing, is possible with experience.

Classified elsewhere

- Directors of nursing (in 0311 *Managers in Health Care*)

3152 Registered Nurses

This unit group includes registered nurses, registered psychiatric nurses and graduates of a nursing program who are awaiting registration (graduate nurses). They provide direct nursing care to patients, deliver health education programs and provide consultative services regarding issues relevant to the practice of nursing. They are employed in a variety of settings including hospitals, nursing homes, extended-care facilities, rehabilitation centres, doctors' offices, clinics, companies and private homes or they may be self-employed.

Examples of titles classified in this unit group

Community Health Nurse
Critical Care Nurse
Graduate Nurse
Nurse Clinician
Nursing Consultant
Nursing Researcher
Occupational Health Nurse
Private Duty Nurse
Public Health Nurse
Registered Nurse (R.N.)
Registered Psychiatric Nurse (R.P.N.)

Main duties

General duty registered nurses perform some or all of the following duties:

- Consult with other members of the health care team to assess, plan, implement and evaluate patient care
- Administer medications and treatments as prescribed by a physician
- Monitor, record and report symptoms and changes in patients' conditions
- Operate or monitor medical apparatus or equipment
- Assist in surgery and other medical procedures
- Supervise registered nursing assistants and other nursing staff.

Registered nurses may specialize in areas such as surgery, obstetrics care, psychiatric care, critical care, paediatrics, geriatrics, community health, occupational health, emergency care, rehabilitation or oncology.

- Occupational health nurses develop and implement employee health education programs and provide registered nursing care in private businesses and industry.
- Public health nurses provide health education and registered nursing care in public health units and through home visits.
- Psychiatric nurses provide nursing care, supportive counselling and life skills programming to patients in psychiatric hospitals and mental health clinics.
- Nursing consultants provide consultative services to institutes or associations regarding issues and concerns relevant to the nursing profession and nursing practice.
- Nursing researchers engage in research activities related to nursing.

Employment requirements

Registered nurses

- Completion of a university, college or other approved registered nursing program is required.
- Additional academic training or experience is required to specialize in a specific area of nursing.
- A master's or doctorate degree in nursing is usually required for clinical nurse specialists, nurse clinicians, nursing consultants and nursing researchers.
- Licensure by a provincial or territorial governing body is required.
- In Quebec, membership in the professional corporation for nurses is mandatory.

Registered psychiatric nurses

- Completion of a college or other registered psychiatric nursing program is required.
- Licensure is required and available only in Manitoba, Saskatchewan, Alberta and British Columbia.

Additional information

- The qualifications of nurses trained exclusively as registered psychiatric nurses (R.P.N.) are recognized only in Manitoba, Saskatchewan, Alberta and British Columbia.
- In all provinces, registered nurses (R.N.) may work as psychiatric nurses without separate licensure as a registered psychiatric nurse.
- Registered nurses may progress to supervisory positions with experience.

Classified elsewhere

- *Head Nurses and Supervisors* (3151)
- *Registered Nursing Assistants* (3233)
- Licensed Practical Nurse (in 3233 *Registered Nursing Assistants*)

3211 Medical Laboratory Technologists and Pathologists' Assistants

Medical laboratory technologists conduct medical laboratory tests, experiments and analyses to assist in the diagnosis, treatment and prevention of disease. They are employed in medical laboratories in hospitals, private clinics, research institutions and universities. Pathologists' assistants assist at autopsies and examinations of surgical specimens or perform autopsies under a pathologist's supervision. They are usually employed in hospitals. Medical laboratory technologists who are also supervisors are included in this unit group.

Examples of titles classified in this unit group

Autopsy Technician
Clinical Immunology Technologist
Cytotechnologist
Histology Technologist
Immunohematology Technologist
Medical Laboratory Technologist
Pathologist's Assistant

Main duties

Medical laboratory technologists perform some or all of the following duties:

- Conduct chemical analyses of blood, urine, cerebro-spinal and other body fluids
- Study blood cells and other tissue to determine their relation to various physiological and pathological conditions
- Prepare tissue sections for microscopic examinations using techniques to demonstrate special cellular tissue elements or other characteristics
- Establish procedures for the analysis of specimens and for medical laboratory experiments
- Perform blood group, type and compatibility tests for transfusion purposes
- May supervise and train other medical laboratory technologists and other medical laboratory workers.

Medical laboratory technologists may specialize in areas such as clinical chemistry, clinical microbiology, hematology, histotechnology, immunohematology and cytotechnology.

Pathologists' assistants perform some or all of the following duties:

- Prepare for autopsies by obtaining patients' medical records and arranging for radiographic examinations
- Assist with or perform autopsies and surgical specimen examinations under pathologists' supervision
- Dissect, examine, weigh and photograph organs and specimens, collect tissue specimens for chemical analysis and record findings
- Prepare bodies for release to funeral homes following completion of autopsies
- Clean and maintain autopsy, surgical and other equipment
- May train junior resident pathologists and train and supervise morgue attendants.

Employment requirements

- Medical laboratory technologists require a bachelor of science or medical laboratory science degree
  or
  A two or three-year college program in medical laboratory technology
  and
  A period of supervised practical training.
- Certification by the Canadian Society of Laboratory Technologists is available for medical laboratory technologists and is usually required by employers.
- In Quebec, membership in the professional corporation for medical technologists is mandatory.
- Pathologists' assistants require a bachelor of science degree.
  or
  Training and experience as a registered nurse, registered nursing assistant or medical laboratory technologist
  and
  Specialized on-the-job training.

Classified elsewhere

- *Medical Laboratory Technicians* (3212)
- Physical and life science technologists in non-medical laboratories (in 221 *Technical Occupations in Physical Sciences* and 222 *Technical Occupations in Life Sciences*)

3212 Medical Laboratory Technicians

Medical Laboratory Technicians conduct routine medical laboratory tests and set up, clean and maintain medical laboratory equipment. They are employed in medical laboratories in hospitals, clinics, research institutes and universities and in government research laboratories.

Examples of titles classified in this unit group

Medical Laboratory Assistant
Medical Laboratory Technician

Main duties

Medical Laboratory Technicians perform some or all of the following duties:

- Collect blood, tissue or other samples from patients
- Log patient samples and prepare them for testing
- Set up medical laboratory equipment
- Conduct routine laboratory tests and sample analyses
- Clean and maintain medical laboratory and medical laboratory equipment.

Employment requirements

- Completion of secondary school and on-the-job training
  or
  A one to two-year college program in medical technology is required.
- In Quebec, membership in the professional corporation for medical technologists is mandatory for medical laboratory technicians.

Classified elsewhere

- *Medical Laboratory Technologists and Pathologists' Assistants* (3211)

3213 Animal Health Technologists

Animal Health Technologists provide technical support to veterinarians by caring for animals and assisting in the diagnosis and treatment of animal health disorders. They are employed in veterinary clinics, animal hospitals, animal shelters, zoos and animal research laboratories.

Examples of titles classified in this unit group

Animal Care Technician
Animal Health Technologist
Animal Technologist
Laboratory Animal Technician
Veterinary Laboratory Technician
Veterinary Technologist

Main duties

Animal Health Technologists perform some or all of the following duties:

- Handle, restrain and care for animals undergoing treatment and surgery
- Perform radiography and other laboratory tests to assist in diagnosis of animal health problems
- Assist veterinarian during surgery by preparing surgical equipment and administering and monitoring anaesthetics
- Prepare and administer medications and vaccines under direction of veterinarian
- Administer treatments as prescribed by a veterinarian
- Conduct specialized procedures such as animal identification, dehorning and hoof trimming
- Counsel clients on animal health care
- Conduct and assist in laboratory research.

Employment requirements

- Completion of a two-year animal health technician or veterinary technician college program or a three-year veterinary technologist college program is required.
- Registration with provincial animal health technologists' associations is available, but is only required for animal health technologists in Alberta and Saskatchewan.

Additional information

- With experience, animal health technologists may progress to supervisory positions such as chief veterinary technician or senior veterinary technician.

Classified elsewhere

- *Pet Groomers and Animal Care Workers* (6483)

3214 Respiratory Therapists and Clinical Perfusionists

Respiratory therapists assist physicians in the diagnosis, treatment and care of patients with respiratory and cardiopulmonary disorders. They are employed in hospitals, medical clinics and respiratory home care companies. Clinical perfusionists provide technical support to cardiac surgeons and anaesthetists during open-heart surgery. They are employed in hospitals. Supervisors and instructors of respiratory therapists and clinical perfusionists are included in this unit group.

Examples of titles classified in this unit group

Cardiovascular Perfusion Supervisor
Cardiovascular Perfusionist (C.P.)
Certified Clinical Perfusionist (C.C.P.)
Chief Perfusionist
Chief Respiratory Technologist
Clinical Instructor – Cardiovascular Perfusion
Respiratory Therapy Clinical Instructor
Perfusionist
Registered Respiratory Therapist (R.R.T.)
Respiratory Technologist
Respiratory Therapist

Main duties

Respiratory therapists perform some or all of the following duties:

- Perform diagnostic tests, such as arterial blood gas analysis and cardiopulmonary functions tests
- Operate and monitor respiratory equipment to administer treatments such as oxygen, oxygen-air mixtures, humidified air or medications
- Perform artificial respiration and external cardiac massage
- Maintain and test diagnostic and therapeutic equipment
- Supervise and train student or other respiratory therapists
- Participate in research related to cardiac and pulmonary disorders.

Respiratory therapists may specialize in areas such as anaesthesia, critical care, paediatrics, cardiopulmonary diagnostics and respiratory home care.

Clinical perfusionists perform some or all of the following duties:

- Assemble, maintain and operate extracorporeal circulation equipment, intra-aortic balloon pumps and other heart assist devices to support or temporarily replace patients' cardiopulmonary functions during open-heart surgery
- Administer blood products, drugs and other substances through heart-lung machines and other devices as directed by cardiac surgeons and anaesthetists
- Monitor vital signs to maintain patients' physiological functions during cardiopulmonary surgery
- Supervise and train student clinical perfusionists and other clinical perfusionists.

Employment requirements

- Respiratory therapists require the completion of a two to three-year college or hospital program in respiratory therapy, including clinical training.
- Clinical perfusionists require the completion of a respiratory therapy or registered nursing program with a minimum of one year of work experience as a respiratory therapist or registered nurse
  and
  Completion of a one-year college program in clinical perfusion, including clinical training.
- Licensure is required for respiratory therapists in Quebec, Manitoba, Alberta and British Columbia.
- In Quebec, membership in the professional corporation for respiratory therapists is mandatory.

Additional information

- Supervisory positions in this unit group, such as respiratory therapy clinical instructor or cardiovascular perfusion supervisor, require experience as a respiratory therapist or clinical perfusionist.

Classified elsewhere

- *Other Technical Occupations in Therapy and Assessment* (3235)
- *Other Medical Technologists and Technicians (Except Dental Health)* (3219)

3215 Medical Radiation Technologists

This unit group includes technologists who operate radiographic and radiation therapy equipment to administer radiation treatment and produce images of body structures for the diagnosis and treatment of injury and disease. They are employed in hospitals, cancer treatment centres, clinics and radiological laboratories. Medical radiation technologists who are supervisors or instructors are included in this unit group.

Examples of titles classified in this unit group

Clinical Instructor, Radiation Therapy
Mammography Technician
Nuclear Medicine Technologist
Radiation Therapist
Radiation Therapy Technologist
Radiography Technologist
Radiotherapy Technician
Supervisor, Nuclear Medicine Technologists
X-Ray Technician

Main duties

Radiography technologists perform some or all of the following duties:

- Operate X-ray, radiographic and fluoroscopic equipment, specialized C.T. scanners and mammography units to produce radiographs or images of body structures for the diagnosis by radiologists of disease or injury
- Record and process patient data
- Perform scheduled maintenance and minor emergency repairs on radiographic equipment
- May train and supervise student radiographers or supervise other radiography technologists.

Nuclear medicine technologists perform some or all of the following duties:

- Prepare radiopharmaceuticals, such as radionuclides and other materials and administer them to patients or to biological samples
- Operate radiation detection equipment, such as gamma cameras, scanners, scintillation counters and ionization chambers, to acquire data for use by nuclear medicine physicians in the diagnosis of disease
- Perform diagnostic procedures using radioactive materials on biological specimens, such as blood, urine and faeces
- Record and process results of procedures
- Check equipment to ensure proper operation
- May train and supervise student nuclear medicine technologists or supervise other nuclear medicine technologists.

Radiation therapists perform some or all of the following duties:

- Operate linear accelerators, cobalt 60, X-ray and other radiation therapy equipment to administer radiation treatment prescribed by radiation oncologists
- Check radiation therapy equipment to ensure proper operation
- Assist radiation oncologists and clinical physicists with preparation of radiation treatment plan
- Assist in the preparation of sealed radioactive materials such as cobalt, radium, cesium and isotopes and the construction of devices such as plaster casts and acrylic moulds to assist with administration of radiation treatment
- May train and supervise student radiotherapy technologists or supervise other radiotherapy technologists.

Employment requirements

- Completion of a two to three-year college, hospital school or other approved program in diagnostic radiography (for radiography technologists), nuclear medicine technology (for nuclear medicine technologists) or radiation therapy (for radiation therapists)
  and
  A period of supervised practical training are required.
- Medical radiation technologists require registration with the Canadian Association of Medical Radiation Technologists or a provincial counterpart or an appropriate provincial governing body.
- In Quebec, membership in the professional corporation for radiology technicians is mandatory.

- Experience as a medical radiation technologist is required for supervisors and instructors.

Additional information

- There is no mobility between the three types of medical radiation technologists without further training.

Classified elsewhere

- Other medical technologists and technicians (in 321 *Medical Technologists and Technicians (Except Dental Health)*).

3216 Medical Sonographers

Medical Sonographers operate ultrasound equipment to produce and record images of various parts of the body to aid physicians in monitoring pregnancies and in diagnosing cardiac, vascular and other disorders. They are employed in clinics and hospitals. Medical Sonographers who are supervisors or instructors are included in this unit group.

Examples of titles in this unit group

Instructor, Diagnostic Medical Sonography
Medical Sonographer
Registered Diagnostic Medical Sonographer
Supervisor, Medical Sonographers
Ultrasound Technologist

Main duties

Medical Sonographers perform some or all of the following duties:

- Operate ultrasound imaging equipment that transmits high frequency sound pulses through the body to produce images of those parts of the body requiring examination
- Monitor examination by viewing images on video screen, to evaluate quality and consistency of diagnostic images, and make adjustments to equipment, as required
- Record and store suitable images by using camera unit connected to the ultrasound equipment
- Observe and care for patients throughout examinations to ensure patient safety and comfort
- Prepare examination reports for physicians to aid in the monitoring of pregnancies and the diagnosis of cardiac, abdominal, ophthalmic, vascular and other disorders
- Check ultrasound equipment to ensure proper operation and perform minor repairs and adjustments as required
- May supervise and train student and other medical sonographers.

Medical sonographers may specialize in abdominal, obstetrical and gynaecological, ophthalmic or peripheral vascular sonography. They may also specialize in adult or pediatric echocardiography or neurosonology.

Employment requirements

- Completion of a training program in a related field such as diagnostic radiography, nuclear medicine or nursing
  and
  Completion of a one-year college or hospital-based program in diagnostic medical sonography and supervised practical training are required.
- Certification examinations by the American Registry of Diagnostic Medical Sonographers are usually required by employers.
- Registration with the Canadian Society of Diagnostic Medical Sonographers or a provincial counterpart is available and may be required by employers.
- In Quebec, membership in the professional corporation for radiology technicians is mandatory.

Additional information

- The Canadian Society of Diagnostic Medical Sonographers recognizes the certifying examinations of the American Registry of Diagnostic Medical Sonographers.

Classified elsewhere

- Other technologists and technicians who operate diagnostic medical equipment (in 3218 *Electroencephalographic and Other Diagnostic Technologists, n.e.c.*)

3217 Cardiology Technologists

Cardiology Technologists operate electrocardiogram and other electronic equipment to record cardiac activity of patients to aid in the diagnosis and treatment of heart disease. They are employed in hospitals and clinics. Cardiology Technologists who are supervisors or instructors are included in this unit group.

Examples of titles classified in this unit group

Cardiac Stress Technologist
Cardiology Supervisor
Cardiology Technologist
Electrocardiographic (ECG) Technologist

Main duties

Cardiology Technologists perform some or all of the following duties:

- Operate electrocardiogram and other electronic equipment to record cardiac activity of patients
- Prepare patients for cardiology procedures and tests, such as electrocardiography tests, ambulatory monitoring, exercise stress testing and pacemaker analysis
- Monitor cardiac activity and record results
- Prepare reports for interpretation by cardiologists
- Reprogram pacemakers according to required standards
- Check cardiology equipment to ensure proper operation
- May supervise and train student and other cardiology technologists.

Employment requirements

- Completion of secondary school is required.
- Completion of a one to two-year college, hospital or other training program in cardiology technology
  and
  Supervised practical training are required.
- Registration with the Canadian Society of Cardiology Technologists is available and is usually required by employers.

Classified elsewhere

- Cardiovascular perfusionists (in 3214 *Respiratory Therapists and Clinical Perfusionists*)
- Other technologists and technicians who operate diagnostic medical equipment (in 3218 *Electroencephalographic and Other Diagnostic Technologists, n.e.c.*)

3218 Electroencephalographic and Other Diagnostic Technologists, n.e.c.

This unit group includes other diagnostic technicians and technologists not elsewhere classified who operate electroencephalographic and other diagnostic equipment to assist physicians in diagnosing diseases, injuries and abnormalities. Electroencephalographic and other diagnostic technicians who are supervisors or instructors are included in this unit group. They are employed in clinics, hospitals and medical laboratories.

Examples of titles classified in this unit group

Electroencephalographic (EEG) Technologist
Electromyography (EMG) Technologist
Electroneurophysiology Technologist
Evoked Potential Technologist
Neuroelectrophysiology Technologist

Main duties

Electroencephalographic technologists perform some or all of the following duties:

- Operate diagnostic equipment such as electroencephalographs and evoked potential equipment to record the electrical activity of the brain, cranial and central nervous system
- Prepare recordings and reports for interpretation by neurologists
- Check, calibrate and perform routine maintenance to diagnostic equipment
- Train and supervise student or other electroencephalographic technologists.

Electromyography technologists perform some or all of the following duties:

- Operate electromyographic equipment to assist physicians in conducting electrophysiological tests such as nerve conduction velocity, muscle strength and repetitive stimulation
- Prepare recordings and reports of findings for physicians to aid in the diagnosis of neuromuscular disorders
- Check, calibrate and perform routine maintenance of equipment
- Train and supervise student or other electromyography technologists.

Employment requirements

- Completion of secondary school and additional specialized training is required for electroencephalographic and other diagnostic technologists in this unit group.
- Electroencephalographic technologists require completion of a two-year college or hospital-based program in electrophysiology technology
  and
  Supervised practical training.
- Registration with the Canadian Board of Electroencephalograph Technologists is available for electroencephalographic technologists and is usually required by employers.
- Electromyography technologists require two years of supervised practical training.
- Registration with the Canadian Society of Clinical Neurophysiologists/EMG Section is available for electromyography technologists and is usually required by employers.
- In Quebec, membership in the professional corporation for medical technologists is mandatory.

Classified elsewhere

- *Cardiology Technologists* (3217)
- *Medical Radiation Technologists* (3215)
- *Medical Sonographers* (3216)
- Other medical technologists (in 3219 *Other Medical Technologists and Technicians (Except Dental Health)*)

3219 Other Medical Technologists and Technicians (Except Dental Health)

This unit group includes medical technologists and technicians not elsewhere classified, such as dietary technicians, ocularists, prosthetists, orthotists, prosthetic technicians and orthotic technicians. Dietary technicians are employed in health care and commercial food service establishments such as hospitals, extended care centres, nursing homes, schools, cafeterias and fast food outlets. Ocularists are employed in artificial eye laboratories or may be self-employed. Prosthetists, orthotists and prosthetic and orthotic technicians are employed in hospitals, clinics, prosthetics and orthotics laboratories, and prosthetic device manufacturing companies. Prosthetists and orthotists may also be self-employed.

Examples of titles classified in this unit group

Dietary Technician
Ocularist
Orthotist
Orthotic Technician
Prosthetist
Prosthetic Technician

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Dietary technicians assist dietitians or nutritionists to plan and supervise food service operations; plan menus and diet for individuals or groups under the direction of a dietitian or nutritionist; assist in the supervision of personnel in the preparation and serving of food; help patients complete menus; and assist dietitians with research in food, nutrition and food service systems.
- Ocularists design, fabricate and fit ocular prostheses, conformers and implants; paint the iris and pupil of artificial eyes; clean and restore ocular prostheses; advise patients concerning the loss of depth perception and the care and use of ocular prostheses; repair and maintain fabrication and laboratory equipment; and consult with ophthalmologists concerning surgical insertion of ocular prostheses.
- Prosthetists and orthotists design, build, fit and repair prosthetic and orthotic appliances such as artificial limbs, braces or supports; interpret physicians' specifications and examine and measure patients to develop working sketches of appliances; make and modify plaster casts of areas to receive prostheses or orthoses; fit, adjust and repair appliances; advise patients in the use and care of prostheses and orthoses; and supervise and direct the activities of prosthetic and orthotic technicians.
- Prosthetic and orthotic technicians assemble or build prosthetic and orthotic appliances according to drawings, measurements and plaster casts using a variety of materials such as metals, plastics, leathers and fabrics; repair, rebuild and modify prosthetic and orthotic appliances or orthopaedic footwear; and may take the body or limb measurements of patients.

Employment requirements

- Dietary technicians require completion of a one to two-year college program in dietary technology and supervised practical training.
- Ocularists require completion of the ocularist training program of the American Society of Ocularists and supervised practical training
  or
  A five-year supervised practical training program under a certified ocularist.
- Certification by the National Examining Board of Ocularists is required.
- Prosthetists and orthotists require a two-year college program in prosthetics and orthotics technology and three years of supervised practical training.
- Certification by the Canadian Board of Certification of Prosthetists and Orthotists (CBCPO) is required.
- Prosthetic and orthotic technicians usually require a two-year college program in prosthetics and orthotics and one to two years of supervised practical training
  or
  Completion of secondary school and up to four years of supervised practical training under a certified prosthetist or orthotist.

- Registration with the Canadian Association of Prosthetists and Orthotists may be required.

Additional information

- Prosthetic and orthotic technicians may become certified prosthetists or orthotists with an additional two years experience as a registered prosthetic or orthotic technician and completion of certification examinations by the Canadian Board of Certification of Prosthetists and Orthotists.

Classified elsewhere

- Other health care technologists and technicians (in 321 *Medical Technologists and Technicians (except Dental Health)*)
- Technologists or technicians in therapy and assessment (in 3235 *Other Technical Occupations in Therapy and Assessment*)

3221 Denturists

Denturists examine patients and design, construct and repair dentures. Most denturists work in private practice.

Examples of titles classified in this unit group

Denture Technician
Denture Therapist
Denturist
Denturologist

Main duties

Denturists perform some or all of the following duties:

- Measure patients' jaws to determine size and shape of dentures required
- Make impressions of patients' teeth, gums and jaws
- Construct dentures or direct other workers to construct dentures
- Fit and modify new dentures
- Repair dentures
- Reline and rebase dentures.

Employment requirements

- Completion of a two or three-year college program in denturist technology is required.
- An apprenticeship in a registered denture clinic is usually required.
- Licensure by a provincial or territorial governing body is required except in Prince Edward Island.
- In Quebec, membership in the professional corporation for denturists is mandatory.

Classified elsewhere

- *Dental Assistants* (3411)
- *Dental Technicians* (3223)
- *Dental Therapists and Dental Hygienists* (3222)
- *Dentists* (3113)

3222 Dental Hygienists and Dental Therapists

Dental hygienists provide dental hygiene treatment and information related to the prevention of diseases and disorders of the teeth and mouth. They are employed in dentists' offices, hospitals, clinics, educational institutions, government agencies and private industry. Dental therapists carry out limited dental services related to the prevention and treatment of diseases and disorders of the teeth and mouth. They are employed by the federal government and the provincial governments of Manitoba and Saskatchewan to provide services in rural and remote communities.

Examples of titles classified in this unit group

Dental Hygienist

Dental Therapist

Main duties

Dental hygienists perform some or all of the following duties:

- Conduct an initial dental assessment and consult with dentists on patient care
- Take dental impressions
- Instruct patients regarding oral hygiene procedures
- Clean and stimulate the gums to prevent gum disease
- Remove stains and deposits from teeth to prevent tooth and root decay
- Apply fluoride treatment
- Take X-rays
- May perform restorative and orthodontic procedures under the direction of a dentist
- May supervise dental assistants in their health care functions.

Dental therapists perform some or all of the following duties:

- Conduct dental assessments and consult with dentist on patient care
- Take dental impressions
- Take X-rays
- Fill cavities, extract teeth and replace portions of tooth crown
- Remove stains and deposits from teeth to prevent tooth and root decay
- Apply fluoride treatment
- Instruct patients regarding oral hygiene procedures
- Supervise dental assistants in their health care functions.

Employment requirements

- Dental hygienists are required to complete a college program ranging from one to three years, or other approved program in dental hygiene recognized by the governing board within the province or territory of residence.
- Dental therapists are required to complete the dental therapy program offered by Health and Welfare Canada or an approved college program in dental therapy.
- Licensure by the appropriate provincial or territorial governing body is required for dental hygienists.
- Licensure is required for dental therapists in Saskatchewan and Manitoba.
- In Quebec, membership in the professional corporation for dental hygienists is mandatory.

Classified elsewhere

- *Dental Assistants* (3411)
- *Dental Technicians* (3223)
- *Dentists* (3113)
- *Denturists* (3221)

3223 Dental Technicians

Dental Technicians prepare and fabricate dentures and dental devices as prescribed by dentists or dental therapists. They are employed in dental laboratories. Dental technician supervisors are also included in this unit group.

Examples of titles classified in this unit group

Dental Technician
Dental Technician Supervisor
Registered Dental Technician

Main duties

Dental Technicians perform some or all of the following duties:

- Fabricate or repair full or partial dentures, and other dental devices such as bridges, inlays, clasps and bands
- May train and supervise other dental technicians or dental laboratory bench workers in fabricating dentures and other dental devices
- May perform supervisory and administrative functions for the dental laboratory.

Employment requirements

- Completion of a college program in dental technology
  or
  Four or more years of on-the-job training under the supervision of a dental technician are required.
- Licensing by the provincial or territorial governing body is available but not mandatory in all provinces.
- In Quebec, membership in the professional corporation for dental technicians is mandatory.

Additional information

- In data provided by Statistics Canada, unit groups 3223 and 3412 are combined to form 3220 *Dental Technicians and Laboratory Bench Workers*.

Classified elsewhere

- *Dental Assistants* (3411)
- *Dental Laboratory Bench Workers* (3412)
- *Dental Therapists and Dental Hygienists* (3222)
- *Denturists* (3221)

3231 Opticians

Opticians fit clients with prescription eyeglasses or contact lenses, assist clients in the selection of eyeglass frames, arrange for the production of eyeglasses or contact lenses and mount lenses in eyeglass frames. They are employed in optical retail outlets or other establishments with optical dispensing departments or may be self-employed. Student opticians and opticians who are managers of optical retail outlets are included in this group.

Examples of titles classified in this unit group

Contact Lens Fitter
Contact Lens Technician
Dispensing Optician
Ophthalmic Dispenser
Optician
Student Optician

Main duties

Opticians perform some or all of the following duties:

- Obtain specifications for eyeglasses or contact lenses from a prescription prepared by an ophthalmologist or optometrist or by analysing the client's eyeglasses or contact lenses and by measuring client's eye curvature, pupillary distance and bridge width, using optical measuring devices
- Assist clients in selecting eyeglasses by advising on lens materials, frames, tints and anti-reflection coating
- Advise on use and care of contact lenses
- Arrange for grinding and polishing of lenses or grind and polish lenses
- Cut and edge lenses and fit lenses into frames
- Adjust finished eyeglasses to fit client
- May supervise or manage the activities of other opticians or student opticians.

Employment requirements

- Completion of a two or three-year college program in ophthalmic dispensing, which includes an apprenticeship
  or
  Completion of an Optician's Guild two-year ophthalmic dispensing correspondence course including practical experience is required.
- Completion of an Optician's Guild two-year contact lens technician correspondence course may also be required for contact lens technicians.
- Licensure by the appropriate provincial licensing board is required in all areas of the country except British Columbia and the Yukon and Northwest Territories.
- In Quebec, membership in the professional corporation for opticians is mandatory.

Classified elsewhere

- *Optometrists* (3121)
- Managers of optical retail outlets or of optical dispensing departments who are not opticians (in 0621 *Retail Trade Managers*)
- Ophthalmologists (in 3111 *Specialist Physicians*)
- Optical lab technicians (in 3414 *Other Aides and Assistants in Support of Health Services*)

3232 Midwives and Practitioners of Natural Healing

Midwives provide care and advice to women during pregnancy, labour, and the post-natal period. They are usually employed in private practice. Practitioners of natural healing provide alternative forms of health care to patients. They are employed by clinics, health clubs, spas or health food stores or may work in private practice.

Examples of titles classified in this unit group

Acupuncturist
Chinese Medical Practitioner
Herbalist
Homeopath
Midwife
Reflexologist
Rolfer
Rolfing Movement Teacher
Shaman
Shiatsu Therapist

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Midwives provide care and advice to women during pregnancy, labour and the post-natal period including monitoring weight gain, supervising diet and assisting during normal childbirth.
- Acupuncturists diagnose the diseases, physiological disorders and injuries of patients and treat them by the insertion of acupuncture needles or through the use of laser and electric stimulation.
- Chinese medical practitioners diagnose the diseases, physiological disorders and injuries of patients and treat them using raw herbs and other medicines, dietary supplements or acupuncture.
- Herbalists advise patients on the use of herbs for the treatment of conditions such as arthritis, rheumatism, asthma, skin disorders and stomach ailments and may sell these herbs.
- Homeopaths diagnose illnesses and treat them by administering, in chemical or herbal form, a small dosage of the illness itself or by suggesting lifestyle changes.
- Reflexologists apply gentle finger pressure to specific spots on the clients' hands or feet to promote relaxation and better health and well-being.
- Rolfers systematically manipulate various parts of the body such as the legs and shoulders in order to realign the structure of the body and reduce chronic pain and stress.

Employment requirements

- Midwives require appropriate training which may be acquired through a university degree or college diploma in nursing and a period of supervised practical training.
- Midwives require licensure in Newfoundland by the Newfoundland Midwifery Board.
- A requirement for registration with the College of Midwives of Ontario is pending in Ontario.
- Acupuncturists require completion of a training program in acupuncture and may also require some university undergraduate studies in science or training in a related health care discipline.
- Acupuncturists in Quebec require a three-year college program in acupuncture and certification by the Corporation professionnelle des médecins du Québec.
- Acupuncturists in Alberta require registration by the Health Disciplines Board.
- Chinese medical practitioners usually require completion of a program in traditional Chinese medicine which is available from certain medical schools abroad
  or
  Some post-secondary education and a diploma in traditional Chinese medicine from a private institute.
- All other occupations in this unit group usually require completion of courses or training programs specific to their occupations and some supervised practical training.

Additional information

- Chinese medical practitioners may practice as acupuncturists.

Classified elsewhere

- Massage therapists (in 3235 *Other Technical Occupations in Therapy and Assessment)*
- Naturopathic and osteopathic physicians (in 3123 *Other Professional Occupations in Health Diagnosing and Treating*)

3233 Registered Nursing Assistants

Registered nursing assistants provide nursing care for patients under the direction of registered nurses, physicians and other health team members. They are employed in hospitals, nursing homes, extended-care facilities, rehabilitation centres, doctors' offices, clinics, companies and private homes. Operating room technicians are included in this unit group.

Examples of titles classified in this unit group

Certified Nursing Assistant
Licensed Nursing Assistant
Licensed Practical Nurse
Operating Room Technician
Registered Nursing Assistant

Main duties

Registered nursing assistants perform some or all of the following duties:

- Take patients' blood pressure, temperature and pulse, distribute medication to patients, and perform other routine nursing procedures
- Change patients' dressings, and bathe and dress patients
- Assist registered nurses with procedures such as respiratory therapy, intravenous (I.V.) therapy, applying sterile compresses and removing sutures
- Monitor patients' progress and report changes to registered nurses, doctors and other health team members.

Operating room technicians perform some or all of the following duties:

- Prepare patients for surgery by washing, shaving and sterilizing the patients' operative areas
- Assist in surgery by laying out instruments, setting up equipment, assisting surgical teams with gowns and gloves and passing instruments to surgeons
- Clean and sterilize the operating room and instruments.

Employment requirements

- Completion of a college or other approved program for registered nursing assistants is required.
- Operating room technicians require either additional academic training in operating room techniques or on-the-job training.
- Provincial licensure is mandatory for certified nursing assistants in Nova Scotia and Saskatchewan; licensed practical nurses in Manitoba and British Columbia; and registered nursing assistants in Newfoundland, New Brunswick, Ontario and Alberta.
- In Quebec, membership in the professional corporation for nursing assistants is mandatory.

Classified elsewhere

- *Nurse Aides and Orderlies* (3413)
- Ward clerks (in 1441 *Administrative Clerks*)

3234 Ambulance Attendants and Other Paramedical Occupations

This unit group includes workers who administer pre-hospital emergency medical care to patients and transport them to hospitals or other medical facilities for further medical care. They are employed by private ambulance services, hospitals, fire departments, government departments and agencies, manufacturing firms, mining companies and other private sector establishments.

Examples of titles classified in this unit group

Ambulance Attendant
Emergency Medical Attendant (EMA)
Emergency Medical Technician (EMT)
Emergency Medical Technician, Paramedic
Emergency Medical Care Assistant
Paramedic
Supervisor, Ambulance Service

Main duties

Workers in this unit group perform some or all of the following duties:

- Assess extent of injuries or illness of trauma victims, patients with respiratory disease and stress, overdose and poisoning victims, industrial accident victims and other ill or injured individuals to determine emergency medical treatment
- Administer pre-hospital emergency care, such as cardiopulmonary resuscitation (CPR), oxygen, bandaging and splinting, to patients
- Establish and maintain intravenous treatment (IV), apply adjunctive equipment for ventilation and circulation complications, administer medications and provide other advanced emergency treatment to patients
- Transport patients by air, land or water to hospital or other medical facility for further medical care
- Document and record nature of injuries and treatment provided
- Assist hospital personnel with provision of medical treatment, if necessary
- Maintain ambulances and emergency care equipment and supplies
- May train and supervise other workers in this unit group.

Employment requirements

- Completion of a college, hospital-based or other recognized program in emergency medical technology ranging from two to twenty-four months or courses in emergency health care
  and
  Supervised practical training are required.
- Certification according to type and length of training by an appropriate governing body is required.
- Those operating emergency vehicles require an appropriate class of licence.

Classified elsewhere

- *Other Aides and Assistants in Support of Health Services* (3414)

3235 Other Technical Occupations in Therapy and Assessment

This unit group includes workers, not elsewhere classified, who perform various technical therapy and assessment functions to assist professionals such as audiologists, speech-language pathologists, ophthalmologists and physiotherapists. They are employed in hospitals, clinics, extended care facilities, rehabilitation centres, educational institutions and in the private practices of the professionals they assist. Massage therapists may also be self-employed.

Examples of titles classified in this unit group

Audio Prosthetist
Audiometric Assistant
Audiometric Technician
Communication Assistant
Hearing Aide Assistant
Massage Therapist
Ophthalmic Assistant
Ophthalmic Technician
Ophthalmic Technologist
Physical Rehabilitation Technician
Speech Therapy Aide
Speech Technician

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Audio prosthetists examine clients to determine appropriate type of hearing aid; take ear impressions for use in the manufacture of the devices; fit and adjust hearing aids; and perform follow-up examinations and readjustments.
- Audiometric assistants administer, under the supervision of audiologists, tests such as speech reception and speech discrimination to determine the hearing thresholds of patients; and record these test results.
- Communication assistants carry out remedial programs, under the supervision of speech language pathologists, to rehabilitate patients with communicative disorders.
- Massage therapists administer massage therapy and other treatments such as whirlpool baths, hot compresses or packs to affected areas of patients' bodies; consult physiotherapists, chiropractors and physicians for advice on patient assessment and the development of a treatment plan; and maintain records of treatments given.
- Ophthalmic medical assistants operate ophthalmic testing and measuring instruments to aide ophthalmologists assess patients' vision; record test results; assist ophthalmologists in office surgery; and administer eye drops, ointments and medications as directed by ophthalmologists.
- Physical rehabilitation technicians carry out, under physiotherapists' direction, treatment programs such as massage, thermotherapy, traction and hydrotherapy to rehabilitate injured or disabled individuals.

Employment requirements

- Audio prosthetists require completion of a three-year college program in audio prosthetics, including a period of supervised training.
- In Quebec, membership in the professional corporation for audio prosthetists is mandatory.
- Audiometric and communication assistants require completion of a twelve to eighteen-month college program in communicative disorders
  or
  Some post-secondary education and on-the-job training.
- Massage therapists require completion of an eighteen to twenty-four month program in massage therapy from an accredited school and supervised practical training.
- Massage therapists in Ontario and British Columbia require registration with the Ontario Board of Directors of Masseurs or the British Columbia Association of Physiotherapists and Massage Therapists, respectively.
- Ophthalmic medical assistants require completion of a nine month college program or a twenty-four to thirty-month hospital-based training program in ophthalmic techniques and procedures
  or
  A minimum of one year of supervised practical training under an ophthalmologist and completion of an approved ophthalmic assistant home study program.

3411 Dental Assistants

Dental Assistants assist dentists during the examination and treatment of patients and perform clerical functions. Most dental assistants work in dentists' offices. Others are employed by government or in educational institutions.

Examples of titles classified in this unit group

Certified Dental Assistant
Certified Intra-Oral Dental Assistant
Dental Assistant
Registered Dental Assistant

Main duties

Dental Assistants perform some or all of the following duties:

- Prepare patients for dental examination and assist the dentist during the examination
- Sterilize and maintain instruments
- Prepare filling materials
- Advise patients on oral hygiene
- Schedule patient appointments and record information on patient care
- Invoice patients for dental services
- Order dental and office supplies
- May perform intra-oral duties such as taking and developing x-rays, polishing and cleaning teeth and applying fluoride treatment.

Employment requirements

- Completion of a three-month to one-year college or other program in dental assistance
  or
  Completion of secondary school with on-the-job training is required.
- Certification is not mandatory, but is required to perform intra-oral duties.

Classified elsewhere

- *Dental Therapists and Dental Hygienists* (3222)
- *Dental Technicians* (3223)

3412 Dental Laboratory Bench Workers

Dental Laboratory Bench Workers assist dental technicians in preparing and fabricating dentures and other dental devices, such as orthodontic appliances, crowns, bridges, clasps and bands. They are employed in commercial dental laboratories.

Examples of titles classified in this unit group

Ceramic Dental Caster
Ceramic Dental Moulder
Dental Laboratory Bench Worker
Denture Finisher
Denture Packer
Denture Waxer
Orthodontic Band Maker

Main duties

Dental Laboratory Bench Workers perform some or all of the following duties:

- Prepare plaster models and moulds from dental impressions
- Prepare wax bite-blocks and impression trays
- Cast gold or metal alloys for bridges and denture bases
- Pack plastic material in moulds to form full or partial dentures
- Mould wax over denture set-up to form contours of artificial gums
- Make orthodontic bands from gold, silver, stainless steel or other metals
- Finish metal framework of dentures and polish and buff dentures to obtain natural finish.

Employment requirements

- Some secondary school education is required.
- Up to two years of on-the-job training are usually required.

Additional information

- Progression to dental technician positions is possible with training, experience and certification.
- In data provided by Statistics Canada, unit groups 3223 and 3412 are combined to form 3220 *Dental Technicians and Laboratory Bench Workers*.

Classified elsewhere

- *Dental Technicians* (3223)
- *Denturists* (3221)

3413 Nurse Aides and Orderlies

Nurse Aides and Orderlies assist nurses, hospital staff and physicians in the basic care of patients. They are employed in hospitals, nursing homes and other health care institutions.

Examples of titles classified in this unit group

Health Care Aide
Hospital Porter
Long-Term Care Aide
Nurse Aide
Nursing Attendant
Orderly
Patient Care Aide
Personal Care Attendant
Psychiatric Aide
Ward Aide

Main duties

Nurse Aides and Orderlies perform some or all of the following duties:

- Answer call signals; supply and empty bed pans; bathe, dress and groom patients; serve meal trays and feed patients; lift, turn or massage patients; shave patients prior to operations; supervise patients' exercise routines; and perform other duties related to patient care
- Take patients' blood pressure, temperature and pulse; collect specimens such as urine, faeces or sputum; administer suppositories, colonic irrigations and enemas and perform other procedures as directed by nursing and hospital staff
- Transport patients in wheelchair or stretcher for treatment or surgery
- Carry messages, reports, requisitions and specimens from one department to another
- Make beds and maintain patients' rooms
- Maintain inventory of supplies.

Employment requirements

- Some secondary school education and on-the-job training
  or
  A nursing aide or health care aide college or private institutional program, or a college nursing orderly program and supervised practical training are required.

Classified elsewhere

- *Registered Nursing Assistants* (3233)
- *Visiting Homemakers, Housekeepers and Related Occupations* (6471)

3414 Other Aides and Assistants in Support of Health Services

This unit group includes workers not elsewhere classified who provide services and assistance to health care professionals such as orthopaedic surgeons, pharmacists, pathologists and optometrists. They are employed in hospitals, clinics, medical pathology laboratories and pharmacies.

Examples of titles classified in this unit group

Acupuncture Assistant
Autopsy Assistant
Cast Room Technician
Laboratory Maintenance Supervisor
Morgue Attendant
Morgue Technician
Ophthalmic Lab Technician, Retail
Orthopaedic Technologist
Pharmacy Assistant
Surgical Assistant

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Orthopaedic technologists assist orthopaedic surgeons in the treatment of orthopaedic diseases and injuries by applying and adjusting casts, splints and bandages; assisting in the application, maintenance and adjustment of traction equipment; cleaning and dressing wounds; and removing casts, sutures and pins.
- Pharmacy assistants assist pharmacists by compounding, packaging and labelling pharmaceutical products and by maintaining prescription records and inventories of medications and pharmaceutical products.
- Morgue attendants assist pathologists at autopsies by laying out surgical instruments; preparing solutions for preservation of specimens; transferring bodies from morgue to examining table; removing organs and tissue specimens, as instructed by attending pathologist, and placing them in preservative solutions; and cleaning and sewing up bodies for release to funeral home.

Employment requirements

- Orthopaedic technologists require completion of secondary school
  and
  Several months of on-the-job training
  or
  A college orthopaedic technologist program.
- Pharmacy assistants require completion of secondary school
  and
  Several months of on-the-job training
  or
  A five to nine-month college program in pharmaceutical services.
- Completion of secondary school and several months of on-the-job training are usually required for other aides and assistants in this unit group.

Classified elsewhere

- Medical technologists and technicians (in 321 *Medical Technologists and Technicians (except Dental Health)*)
- Operating room technicians (in 3233 *Registered Nursing Assistants*)
- Pathologists' assistants (in 3211 *Medical Laboratory Technologists and Pathologists' Assistants*)

Major Group 41
PROFESSIONAL OCCUPATIONS IN SOCIAL SCIENCE, EDUCATION, GOVERNMENT SERVICES AND RELIGION

411 Judges, Lawyers and Quebec Notaries

4111 Judges
4112 Lawyers and Quebec Notaries

412 University Professors and Assistants

4121 University Professors
4122 Post-Secondary Teaching and Research Assistants

413 College and Other Vocational Instructors

4131 College and Other Vocational Instructors

414 Secondary and Elementary School Teachers and Counsellors

4141 Secondary School Teachers
4142 Elementary School and Kindergarten Teachers
4143 School and Guidance Counsellors

415 Psychologists, Social Workers, Counsellors, Clergy and Probation Officers

4151 Psychologists
4152 Social Workers
4153 Family, Marriage and Other Related Counsellors
4154 Ministers of Religion
4155 Probation and Parole Officers and Related Occupations

416 Policy and Program Officers, Researchers and Consultants[7]

4160 Health and Social Policy Researchers, Consultants and Program Officers
4161 Natural and Applied Science Policy Researchers, Consultants and Program Officers
4162 Economists and Economic Policy Researchers and Analysts
4163 Economic Development Officers and Marketing Researchers and Consultants
4164 Social Policy Researchers, Consultants and Program Officers
4165 Health Policy Researchers, Consultants and Program Officers
4166 Education Policy Researchers, Consultants and Program Officers
4167 Recreation and Sports Program Supervisors and Consultants
4168 Program Officers Unique to Government
4169 Other Professional Occupations in Social Science

Major Group 42
PARAPROFESSIONAL OCCUPATIONS IN LAW, SOCIAL SERVICES, EDUCATION AND RELIGION

421 Paralegals, Social Services Workers and Occupations in Education and Religion, n.e.c.[8]

4211 Paralegal and Related Occupations
4212 Community and Social Service Workers
4213 Employment Counsellors
4214 Early Childhood Educators
4215 Instructors and Teachers of Disabled Persons
4216 Other Instructors
4217 Other Religious Occupations

[7] In data provided by Statistics Canada, unit groups 4164 and 4165 are combined to form *4160 Health and Social Policy Researchers, Consultants and Program Officers*.
[8] In data provided by Statistics Canada, unit groups 4214 and 6473 are combined to form *6470 Early Childhood Educators and Assistants*. Hence, Statistics Canada data for major group 42 and for minor group 421 does not include unit group 4214.

4111 Judges

Judges adjudicate civil and criminal cases and administer justice in courts of law. Judges preside over federal and provincial courts.

Examples of titles classified in this unit group

Chief Justice
County Court Judge
Court of Queen's Bench Justice
District Court Judge
Family Court Judge
Federal Trial Court Justice
Provincial Court of Appeal Justice
Small Claims Court Judge
Superior Court Justice
Supreme Court Justice

Main duties

Judges perform some or all of the following duties:

- Preside over courts of law, interpret and enforce rules of procedure and make rulings regarding the admissibility of evidence
- Instruct the jury on laws that are applicable to the case
- Weigh and consider evidence in non-jury trials and decide legal guilt or innocence or degree of liability of the accused or defendant
- Pass sentence on persons convicted in criminal cases and determine damages or other appropriate remedy in civil cases
- Grant divorces and divide assets between spouses
- Determine custody of children between contesting parents and other guardians
- Enforce court orders for access or support
- Supervise other judges and court officers.

Judges may specialize in particular areas of law such as civil, criminal or family law.

Employment requirements

- Extensive experience as a lawyer or as a professor of law with continuous membership in the bar association is usually required.
- Membership in good standing with a provincial or territorial law society or bar association is required.
- Judges are appointed by federal or provincial cabinet.
- Those appointed to more senior positions in a court, such as chief justice, usually have experience as judges in that court.

Classified elsewhere

- Administrative tribunal judges (in 0411 *Government Managers in Health and Social Policy Development and Program Administration*)
- Citizenship court judges (in 1227 *Court Officers and Justices of the Peace*)
- Justices of the Peace (in 1227 *Court Officers and Justices of the Peace*)

4112 Lawyers and Quebec Notaries

Lawyers and Quebec Notaries advise clients on legal matters, plead cases or conduct prosecutions in courts of law, represent clients before tribunals and administration boards and draw up legal documents such as contracts and wills. Lawyers and Quebec Notaries are employed in law firms, notary offices, prosecutor's offices, federal, provincial and municipal governments and various business establishments or they may be self-employed. Articling students are included in this group.

Examples of titles classified in this unit group

Articling Student
Attorney
Barrister
Corporate Counsel
Corporation Notary (Quebec)
Crown Attorney
Crown Prosecutor
General Counsel
Law Partner
Lawyer
Legal Advisor
Notary (Quebec)
Notary in Partnership (Quebec)
Solicitor

Main duties

Lawyers and Quebec Notaries perform some or all of the following duties:

- Advise clients of their legal rights and all matters related to law
- Plead clients' cases before courts of law, tribunals and boards (lawyers only)
- Draw up legal documents such as real estate transactions, wills, divorces and contracts
- Negotiate settlements of civil disputes (lawyers only)
- Perform administrative and management functions related to the practice of law
- May act as executor, trustee or guardian in estate and family law matters.

Lawyers and Quebec Notaries may specialize in specific areas of law such as criminal law (lawyers only), corporate law, commercial law, real estate law, family and estate law, intellectual property law and labour law.

Employment requirements

Lawyers

- Two to three years of undergraduate studies or, in Quebec, completion of college program
  and
  A bachelor's degree from a recognized law school
  and
  A period of articling
  and
  A bar admission course and successful completion of the bar examination set by the provincial law society are required.
- Licensure by the provincial or territorial law society is required.
- In Quebec, membership in the professional corporation for lawyers is mandatory.
- Lawyers may specialize in a particular area of law through experience.

Notaries (Quebec)

- Two to three years of undergraduate studies or, in Quebec, completion of college program
  and
  A bachelor's degree from a recognized law school
  and
  A one-year course in notarial practice from a recognized faculty of law or a Diploma of Notarial Law (D.D.N.)
  and
  Successful completion of the final examination set by the Chamber of Notaries are required.
- Registration with the Chamber of Notaries is required.

- In Quebec, membership in the professional corporation for notaries is mandatory.
- Quebec notaries may specialize in a particular area of law through experience.

Additional information

- Lawyers wishing to practise in another province may be required to pass examinations set by the provincial law society.

Classified elsewhere

- Legal department directors (in 0114 *Other Administrative Services Managers*)
- Legal firm managers (in 0123 *Other Business Services Managers*)
- Notaries public and trademark agents who are not lawyers (in 4211 *Paralegal and Related Occupations*)
- Patent agents who are not lawyers (in 4161 *Natural and Applied Science Policy Researchers, Consultants and Program Officers*)

4121 University Professors

University Professors teach courses to undergraduate and graduate students and conduct research at universities and degree-granting colleges. University Professors who are heads of departments are included in this unit group.

Examples of titles classified in this unit group

Assistant Professor, Botany
Associate Professor, Linguistics
Chairperson, Food Sciences Department
Chairperson, Physics Department
Department Head, Geography
Lecturer, University
University Professor
Professor of Computer Sciences
Professor of Medicine
English Professor
University Instructor, Engineering

Main duties

University Professors perform some or all of the following duties:

- Teach one or more university subjects to undergraduate and graduate students
- Prepare and deliver lectures to students and conduct laboratory sessions or discussion groups
- Prepare, administer and grade examinations, laboratory assignments and reports
- Direct research programs of graduate students and advise on research matters
- Conduct research in field of specialization and publish findings in scholarly journals or books
- May serve on faculty committees dealing with such matters as curriculum planning and degree requirements
- May provide professional consultative services to government, industry and private individuals.

University professors specialize in a particular subject matter such as biology, chemistry, anatomy, sociology, business administration or law.

Employment requirements

- A doctorate degree in the field of specialization is required.
- Licences or professional accreditation may be required for professors teaching future practitioners in certain professionally regulated fields, such as medicine, engineering, architecture, psychology or law.

Additional information

- University professors who are also practitioners in their field of specialization must have the appropriate licenses or accreditation.
- Progression to senior positions within a department, faculty or university is possible with experience.

Classified elsewhere

- *Administrators in Post-Secondary Education and Vocational Training* (0312)
- *College and Other Vocational Instructors* (4131)
- *Post-Secondary Teaching and Research Assistants* (4122)

4122 Post-Secondary Teaching and Research Assistants

Post-Secondary Teaching and Research Assistants assist university professors, community college teachers and other faculty members in teaching and research activities at universities and colleges.

Examples of titles classified in this unit group

College Teaching Assistant
Graduate Assistant
Post-Doctoral Fellow
Research Assistant, University

Main duties

Post-secondary teaching assistants perform some or all of the following duties:

- Organize reference materials, visual aids and other materials as required by university professors or college teachers for lectures
- Conduct seminars, discussion groups and laboratory sessions to supplement lectures
- Assist in preparation and administration of examinations
- Grade examinations, term papers and laboratory reports.

Research assistants perform some or all of the following duties:

- Conduct literature reviews, surveys, laboratory experiments and other research for use in scholarly publications
- Compile research results and assist professor in analysis of results and preparation of journal articles or papers.

Post-secondary teaching and research assistants specialize in a subject matter based on their field of study.

Employment requirements

- Enrolment in a university or college program is required.

Classified elsewhere

- *Elementary and Secondary School Teacher Assistants* (6472)

4131 College and Other Vocational Instructors

This unit group includes instructors who teach applied arts, academic, technical and vocational subjects to students at community colleges, CEGEPs, agricultural colleges, technical institutes, language schools, bible colleges and other vocational schools. This unit group also includes trainers who are employed by companies and governments to teach internal training and development courses. College teachers who are heads of departments are included in this group.

Examples of titles classified in this unit group

CEGEP Teacher
Commercial Art Instructor
College Department Chairperson, Trade Programs
College Teacher
Community College Teacher
Company Trainer
Computer Training Instructor
Department Head, Dental Hygienist Program
Hairdressing Teacher
Language Instructor, Language School
Teacher, Legal Assistant Program
Training Officer
Vocational School Teacher

Main duties

College and Other Vocational Instructors perform some or all of the following duties:

- Teach students using a systematic plan of lectures, demonstrations, discussion groups, shop sessions and seminars
- Prepare teaching materials and outlines for courses
- Prepare, administer and mark tests and papers to evaluate students' progress
- Advise students on program curricula and career decisions
- May serve on faculty committees concerned with matters such as budgets, curriculum revision and course and diploma requirements.

College and other vocational instructors specialize in particular fields of study such as visual arts, dental hygiene, welding, broadcasting, engineering technology or law and security.

Employment requirements

- A bachelor's degree or college diploma or demonstrated expertise in the field of instruction is required.
- A master's degree in the field of instruction may be required.
- For instructors of trades, completion of apprenticeship training, trade certification and additional courses in teaching are required.

Additional information

- Progression to administrative positions in post-secondary education is possible with experience.

Classified elsewhere

- *Secondary School Teachers* (4141)
- *University Professors* (4121)
- Instructors teaching non-academic or non-vocational courses (in 4216 *Other Instructors*)

4141 Secondary School Teachers

Secondary School Teachers prepare and teach academic, technical, vocational or specialized subjects at public and private secondary schools. Secondary school teachers who are heads of departments and high school librarians are included in this group.

Examples of titles classified in this unit group

Adult Education Teacher, Secondary School
Biology Teacher, High School
Commerce Teacher, Secondary School
Department Head, Secondary School
English Teacher, Secondary School
English as Second Language Teacher, High School
French as Second Language Teacher, High School
History Teacher, Secondary School
High School Teacher, Special Education
Librarian, High School
Secondary School Teacher
Supply Teacher, High School
Vocational Teacher, High School

Main duties

Secondary School Teachers perform some or all of the following duties:

- Prepare subject material for presentation to students according to an approved curriculum
- Teach students using a systematic plan of lectures, discussions, audio-visual presentations, and laboratory, shop and field studies
- Assign and correct homework
- Prepare, administer and correct tests
- Evaluate progress of students and discuss results with parents and school officials
- Participate in staff meetings, educational conferences and teacher training workshops
- May advise students on course selection and on vocational and personal matters.

Secondary school teachers may specialize in such areas as mathematics, English, French, special education or second language instruction.

Employment requirements

- Teachers of academic subjects require a bachelor's degree in education which is often preceded by a bachelor's degree in the arts or sciences.
- Teachers of vocational or technical subjects, require a bachelor's of education which is usually preceded by several years training or experience in the subject.
- Department heads require several years of teaching experience.
- To specialize in special education or English or French as a second language, additional training is required.
- A provincial teaching certificate is required.

Additional information

- Progression to vice-principal or other administrative positions in the education system is possible with experience.

Classified elsewhere

- *Elementary School and Kindergarten Teachers* (4142)
- *Elementary and Secondary School Teacher Assistants* (6472)
- *School and Guidance Counsellors* (4143)
- *College and Other Vocational Instructors* (4131)
- Teachers of non-academic or vocational courses (in 4216 *Other Instructors*)
- Teachers teaching life skills courses to disabled persons (in 4215 *Instructors and Teachers of Disabled Persons*)

4142 Elementary School and Kindergarten Teachers

Elementary School and Kindergarten Teachers teach basic subjects such as reading, writing and arithmetic or specialized subjects such as English or French as a second language at public and private elementary schools. Elementary school librarians are included in this unit group.

Examples of titles classified in this unit group

Elementary School Teacher
Elementary School Teacher, English as a Second Language
Elementary School Teacher, French as a Second Language
French Immersion Teacher, Elementary School
Kindergarten Teacher
Primary School Teacher
Librarian, Elementary School
Special Education Teacher, Elementary School
Supply Teacher, Elementary School

Main duties

Elementary School and Kindergarten Teachers perform some or all of the following duties:

- Prepare courses for presentation to students according to approved curriculum
- Teach students using a systematic plan of lessons, discussions, audio-visual presentations and field trips
- Lead students in activities to promote their physical, mental and social development and their school readiness
- Assign and correct homework
- Prepare, administer and correct tests
- Evaluate the progress of students and discuss results with students, parents and school officials
- Participate in staff meetings, educational conferences and teacher training workshops
- May supervise teachers' aides.

Elementary school and kindergarten teachers may specialize in such areas as special education or second language instruction.

Employment requirements

- A bachelor's degree in education is required.
- Additional training is required to specialize in special education or second language instruction.
- A provincial teaching certificate is required. Additional certification is required to teach English or French as a second language.

Additional information

- Progression to education consultant or school principal is possible with experience.
- In Quebec, membership in the professional corporation for social workers is mandatory.

Classified elsewhere

- *Early Childhood Educator Assistants* (6473)
- *Early Childhood Educators* (4214)
- *Elementary and Secondary School Teacher Assistants* (6472)
- *School Principals and Administrators of Elementary and Secondary Education* (0313)
- Teachers teaching life skills to disabled persons (in 4215 *Instructors and Teachers of Disabled Persons*)

4143 School and Guidance Counsellors

School and Guidance Counsellors advise students on educational issues, career planning and personal development and co-ordinate the provision of counselling services to students, parents and teachers. They are employed by school boards and work in elementary and secondary schools.

Examples of titles classified in this unit group

Educational Counsellor
Guidance Counsellor
School Counsellor
Student Counsellor

Main duties

School and Guidance Counsellors perform some or all of the following duties:

- Counsel students regarding educational issues such as course selection, school adjustment, truancy, study habits and career planning
- Counsel students regarding personal and social issues such as substance abuse, depression, sexuality, self-esteem and family problems
- Consult with teachers and parents regarding various issues and concerns, and with administrators and community agencies regarding programs and referrals
- Co-ordinate the provision of counselling and information services to students, parents and teachers, such as career information services, professional development sessions and interactions with other educational institutions
- Administer and interpret standardized intelligence, aptitude and interest tests
- May teach regular classes.

Employment requirements

- A bachelor's degree in education is required.
- Graduate courses in counselling are usually required.
- A teacher's certificate from the province of employment is required.
- In Quebec, membership in the professional corporation for school and guidance counsellors is mandatory.
- Some teaching experience is usually required.

Classified elsewhere

- *Family, Marriage and Other Related Counsellors* (4153)
- *Secondary School Teachers* (4141)
- *Social Workers* (4152)
- School psychologists (in 4151 *Psychologists*)

4151 Psychologists

Psychologists diagnose psychological and emotional disorders, counsel clients, provide therapy and research and apply theory relating to behaviour and mental processes. Psychologists work in private practice or in institutions such as clinics, correctional facilities, hospitals, rehabilitation centres, schools and universities.

Examples of titles classified in this unit group

Clinical Psychologist
Experimental Psychologist
Psychologist
Research Psychologist

Main duties

Psychologists perform some or all of the following duties:

- Examine behaviour, diagnose psychological and emotional disorders, counsel clients and provide therapy
- Counsel individuals and groups to achieve more effective personal, social and vocational development and adjustment
- Apply psychological theory and principles regarding behaviour and mental processes such as learning, memory, perception and language development
- Formulate hypotheses and experimental designs, review literature, conduct studies and publish research papers.

Psychologists may specialize in clinical psychology or experimental research. They may also specialize in specific areas such as behavioural psychology, child psychology, cognitive psychology, developmental psychology, educational psychology, industrial psychology, neuropsychology, social psychology or sports psychology.

Employment requirements

- A doctoral degree in psychology is required in Prince Edward Island, Nova Scotia, Ontario, Manitoba, Saskatchewan and British Columbia.
- A master's degree in psychology is required in Newfoundland, New Brunswick, Quebec, Alberta and the Northwest Territories.
- A period of supervised practical experience is usually required.
- Successful completion of provincial written and/or oral examinations is usually required.
- A provincial certificate of registration is required in all provinces and the Northwest Territories.
- In Quebec, membership in the professional corporation for psychologists is mandatory.
- Psychologists become specialized in a particular area through training and experience.

Classified elsewhere

- Psychiatrists (in 3111 *Specialist Physicians*)
- Psychology research assistants, non-university (in 4164 *Social Policy Researchers, Consultants and Program Officers*)
- Psychologists who teach at universities (in 4121 *University Professors*)
- Psychology research assistants, university (in 4122 *Post-Secondary Teaching and Research Assistants*)
- Psychometrists (in 4169 *Other Professional Occupations in Social Science*)

4152 Social Workers

Social Workers treat social functioning difficulties, provide counselling, therapy and referral to other supportive social services, and evaluate child development and the adequacy of child care. They are employed by hospitals, school boards, social service agencies, welfare organizations and correctional facilities, and may also work in private practice.

Examples of titles classified in this unit group

Co-ordinator of Social Work
Medical Social Worker
Psychiatric Social Worker
Social Work Supervisor
Social Worker

Main duties

Social Workers perform some or all of the following duties:

- Interview clients individually, in families, or in groups, to assess their situation and problems and determine the types of services required
- Provide counsel and therapy to assist clients in developing skills to deal with and resolve their social and personal problems
- Plan programs of assistance for clients including referral to agencies that provide financial assistance, legal aid, housing, medical treatment and other services
- Investigate cases of child abuse or neglect and take authorized protective action when necessary
- Serve as members on interdisciplinary teams of professionals working with client groups
- Act as advocates for client groups in the community and lobby for solutions to problems directly affecting client groups
- Develop or advise on social policy, conduct social research, and assist in community development
- May supervise other social workers.

Employment requirements

- A bachelor's degree in social work is required.
- In Alberta, a master's degree in social work is required.
- Supervised practical experience is usually required.
- Successful completion of provincial written and/or oral examinations is usually required.
- A provincial certificate of registration is required by Newfoundland, Prince Edward Island, New Brunswick, Quebec and Saskatchewan.
- Membership in a provincial Association of Social Workers is usually required.
- In Quebec, membership in the professional corporation for social workers is mandatory.

Classified elsewhere

- *Community and Social Service Workers* (4212)
- *Family, Marriage and Other Related Counsellors* (4153)
- *Managers in Social, Community and Correctional Services* (0314)
- *School and Guidance Counsellors* (4143)

4153 Family, Marriage and Other Related Counsellors

Family, Marriage and Other Related Counsellors assist individuals and groups of clients to identify, understand and overcome personal problems and achieve personal objectives. They are employed by social service agencies and hospitals, or may work in private practice.

Examples of titles classified in this unit group

Addictions Counsellor
Bereavement Counsellor
Family Counsellor
Marriage Counsellor
Rehabilitation Counsellor
Sex Therapist
Vocational Rehabilitation Counsellor
Youth Counsellor

Main duties

Family, Marriage and Other Related Counsellors perform some or all of the following duties:

- Interview clients, prepare case histories and assess problems
- Develop and implement counselling and intervention programs to assist clients in determining goals and means of attaining them
- Counsel clients and provide therapy
- Evaluate the effectiveness of counselling programs and clients' progress in resolving identified problems and movement towards defined objectives
- Follow up results of counselling programs and clients' adjustments
- May supervise other counsellors, social service staff and assistants
- May provide public education and consultation to other professionals or groups regarding counselling services, issues and methods.

Family, marriage and other related counsellors often specialize in dealing with a specific client group such as injured workers, or with specific problems, such as drug and alcohol addiction, marital difficulties or behavioural disorders.

Employment requirements

- A master's degree in counselling or a related discipline is required.

Additional information

- Counsellors usually become specialized in a particular area through training and experience.
- Progression to social service management positions is possible with additional training and experience.

Classified elsewhere

- *Employment Counsellors* (4213)
- *Managers in Social, Community and Correctional Services* (0314)
- *School and Guidance Counsellors* (4143)
- *Social Workers* (4152)

4154 Ministers of Religion

Ministers of Religion conduct religious services, administer the rites of a religious faith or denomination, provide spiritual and moral guidance and perform other functions associated with the practice of a religion. Ministers of Religion perform these duties in churches, synagogues, temples or other places of worship. They may also work in other institutions such as schools, hospitals and prisons.

Examples of titles classified in this unit group

Archbishop
Bishop
Cardinal
Chancellor
Chaplain
Evangelist
Imam
Minister
Moderator
Pastor
Priest
Rabbi

Main duties

Ministers of Religion perform some or all of the following duties:

- Conduct religious services
- Administer rites of faiths such as marriages and funerals
- Provide spiritual and moral guidance to members of a religious faith
- Supervise, plan and administer programs of religious education
- May participate in humanitarian endeavours, social services and welfare activities
- May share in the administrative and financial operation of a religious community.

Employment requirements

- Educational requirements vary, depending on the religion, and range from the completion of a college or other program in religious studies to a Master's of Divinity degree.
- A period of study with a senior minister is usually required.

Additional information

- Progression to senior positions within a religious order is possible with experience.

Classified elsewhere

- *Other Religious Occupations* (4217)

4155 Probation and Parole Officers and Related Occupations

Probation officers monitor the conduct and behaviour of criminal offenders serving probation terms. Parole officers monitor the reintegration of criminal offenders serving the remainder of sentences while conditionally released into the community on parole. Classification officers assess inmates and develop rehabilitation programs for criminal offenders who are incarcerated in correctional facilities. They are employed by federal and provincial governments and work in the community and in correctional facilities.

Examples of titles classified in this unit group

Case Manager, Corrections
Classification Officer, Correctional Institution
Institution Case Management Officer
Parole Officer
Probation Officer
Youth Worker, Corrections

Main duties

Probation and parole officers perform some or all of the following duties:

- Interview offenders to prepare pre-sentence reports and assess offenders' prospects for successful reintegration into the community
- Plan rehabilitation programs with offenders, establishing rules of conduct, goals and objectives
- Refer offenders to community and social service programs, as required
- Supervise the terms of a probation order
- Interview probationers and parolees regularly to evaluate their progress in accomplishing goals and maintaining the terms specified in their probation contracts and rehabilitation plans
- Recommend remedial action or initiate court action when there is a wilful failure to comply with terms of probation or parole.

Classification officers, correctional institutions perform some or all of the following duties:

- Interview inmates to assess adjustment problems and develop suitable rehabilitation programs
- Prepare classification reports recommending type of incarceration and types of interventions considered most beneficial for the rehabilitation of the inmates
- Plan rehabilitation programs with offenders, identifying needs and setting out goals and objectives
- Liaise with the inmates' families and contacts in the community to maintain established bonds outside of the institution
- Advise and counsel inmates regarding their problems and evaluate their progress.

Employment requirements

- A bachelor's degree in social work, criminology, psychology or other related social science discipline is required.
- A master's degree in social work, criminology, psychology or other related social science discipline may be required.
- For parole officers, several years of experience as a correctional officer and successful completion of a university equivalency test may substitute for formal education requirements.

Additional information

- Progression to correctional service management positions is possible with additional training or experience.

Classified elsewhere

- *Community and Social Service Workers* (4212)
- *Correctional Service Officers* (6462)
- *Social Workers* (4152)
- Correctional services managers (in 0314 *Managers in Social, Community and Correctional Services*)

4165 Health Policy Researchers, Consultants and Program Officers

Health Policy Researchers, Consultants and Program Officers conduct research, produce reports and administer health care policies and programs. They are employed by government departments and agencies, consulting establishments, professional associations and non-governmental organizations.

Examples of titles classified in this unit group

Consultant, Mental Health Programs
Consultant, Drug and Alcohol Abuse
Health Care Planner
Health Promotion Program Officer
Planning Officer, Child Health Care Programs
Policy Development Officer, Nursing Homes
Research Analyst, Health Policy
Consultant, Health Care

Main duties

Health Policy Researchers, Consultants and Program Officers perform some or all of the following duties:

- Assist in developing government health policy by reviewing relevant literature, conducting interviews, collecting and analyzing statistical data and providing advice to senior managers and officials
- Maintain, update and manage health information databases
- Compile and analyse statistical information provided by private and public health care institutions and organizations and produce reports
- Monitor and evaluate health care programs operated by government departments and agencies or private organizations
- Provide consulting services to clients in private establishments or government departments or agencies
- Produce newsletters, magazines and other documents to provide information to association or organization members or the general public
- Present the views of an association or organization to politicians, government officials, the media or the general public.

Health policy researchers, consultants and program officers may specialize in a particular area of health policy development, research or program administration such as addiction research.

Employment requirements

- A bachelor's degree or college diploma in health science, public administration or hospital administration or a bachelor's degree in social science is required.
- A graduate degree in health, social science or an administrative discipline may be required.
- Several years of experience in the health field as a health care professional or as a community or social services worker are usually required.

Additional information

- Progression to managerial positions is possible with experience.
- In data provided by Statistics Canada, unit groups 4164 and 4165 are combined to form 4160 *Health and Social Policy Researchers, Consultants and Program Officers.*

Classified elsewhere

- *Community and Social Service Workers* (4212)
- *Education Policy Researchers, Consultants and Program Officers* (4166)
- *Government Managers in Health and Social Policy Development and Program Administration* (0411)
- *Managers in Health Care* (0311)
- *Social Policy Researchers, Consultants and Program Officers* (4164)

4166 Education Policy Researchers, Consultants and Program Officers

Education Policy Researchers, Consultants and Program Officers conduct research, produce reports and administer elementary, secondary and post-secondary education policies and programs. They are employed by government departments, school boards and education research institutes or they may be self-employed.

Examples of titles classified in this unit group

Co-ordinator, Special Education
Curriculum Developer
Curriculum Planner
Education Consultant
Education Policy Officer
Education Program Co-ordinator
Education Program Officer
Education Researcher
Supervisor, Education Policy

Main duties

Education Policy Researchers, Consultants and Program Officers perform some or all of the following duties:

- Conduct research, produce reports and administer education policies and programs
- Evaluate curriculum programs and recommend improvements
- Develop the structure, content and objectives of new programs
- Conduct statistical analyses to determine cost and effectiveness of education policies and programs
- Provide on-going professional development, training and consultative services to teachers
- Develop teaching materials and other resources for program delivery
- May supervise the work of other education policy researchers, consultants or program officers.

Employment requirements

- A bachelor's degree in education or in a discipline such as social science or business administration is required.
- A master's degree in education may be required.
- Several years of experience as a school teacher are usually required.
- A teacher's certificate for the province of employment is usually required.

Additional information

- Progression to managerial positions is possible with experience.

Classified elsewhere

- *College and Other Vocational Instructors* (4131)
- *Elementary School and Kindergarten Teachers* (4142)
- *Government Managers in Education Policy Development and Program Administration* (0413)
- *School and Guidance Counsellors* (4143)
- *Secondary School Teachers* (4141)

4167 Recreation and Sports Program Supervisors and Consultants

This unit group includes those who oversee and administer recreation and sports programs and activities, provide consulting services and conduct research and develop programs and policies related to recreation, sports and physical fitness. They are employed by federal, provincial and municipal governments, health and sports organizations, community centres, recreational institutions, sport and fitness consulting firms or they may also be self-employed.

Examples of titles classified in this unit group

Camp Co-ordinator
Fitness Consultant
Fitness Supervisor
Kinesiologist
Pool Co-ordinator – Recreation
Recreation Consultant
Sport Policy Analyst
Sports Consultant
Sports Program Supervisor

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Kinesiologists conduct fitness tests and assessments and design, develop and deliver fitness counselling and exercise programs.
- Fitness consultants provide expert advice and consulting services to community groups, corporations, schools and other organizations in the design and development of fitness programs and activities.
- Recreation consultants provide expert advice and consulting service to communities, corporations, institutions and other organizations in the design and development of recreation programs and activities.
- Recreation, sports and fitness policy analysts conduct research and develop government policies related to recreation, sports and fitness.
- Recreation and sports program supervisors develop, plan and co-ordinate sports, fitness and recreation programs.
- Sports consultants provide expert advice and consulting service to sports associations and other organizations in the design, development and administration of sports programs and activities.

Employment requirements

- A university degree in recreation administration, sports administration, physical education, kinesiology or related discipline combined with some work experience in a related field
  or
  A college diploma in a recreation, sports or fitness program combined with some experience in a related field.
- Kinesiologists usually require a master's degree in kinesiology.
- Recreation and sports program supervisors require experience as a program leader or instructor in recreation and sport. Certification in program specialization, such as fitness or lifesaving, may also be required.
- Certified Fitness Appraiser certificate may be required for fitness consultants.

Additional information

- Recreation and sport program supervisors may progress to recreation and sport management positions with experience.
- Mobility among recreation, sports and fitness consultants may be restricted within individual area of expertise.

Classified elsewhere

- *Program Leaders and Instructors in Recreation and Sport* (5254)
- *Recreation and Sports Program and Service Directors* (0513)

4168 Program Officers Unique to Government

Program officers in this unit group are primarily concerned with the administration and operation of government institutions, such as Parliament, and activities unique to the operation of government, such as international relations, federal-provincial affairs and elections.

Examples of titles classified in this unit group

Attaché
Elections Officer
Federal-Provincial Relations Officer
Foreign Service Officer
Intergovernmental Affairs Officer
Officer, Office of the Speaker
Officer, Royal Commission
Officer, Standing or Select Committee
Protocol Officer
Returning Officer
Tribunal Officer

Main duties

Program Officers Unique to Government perform some or all of the following duties:

- Advise politicians or diplomats on the social, economic and political effects of government decisions on other governments in Canada or abroad
- Plan inter-governmental meetings and conferences with officers of other municipal, provincial or federal governments
- Co-ordinate the logistics and administration of elections within constituencies and ensure that electoral and voting procedures are followed
- Co-ordinate administrative support services for legislative committees, royal commissions, or tribunals
- Plan logistics and oversee diplomatic protocol of official visits to Canada by foreign politicians and dignitaries
- Explain Canadian foreign and domestic policies to governments and nationals of foreign countries.

Employment requirements

- A bachelor's degree is usually required.
- A master's degree may be required.
- Several years of experience as a researcher, consultant or program administrator may be required.
- Foreign service officers are accepted on the basis of competitive examination.

Classified elsewhere

- *Administrative Officers* (1221)
- *Court Officers and Justices of the Peace* (1227)
- *Economists and Economic Policy Researchers and Analysts* (4162)
- *Executive Assistants* (1222)
- *Immigration, Unemployment Insurance and Revenue Officers* (1228)
- *Social Policy Researchers, Consultants and Program Officers* (4164)

- Trade mark agents require registration with the federal Trade Mark Office.
- Independent paralegals require knowledge of legal principles and procedures usually obtained through industry-sponsored courses and through experience.

Classified elsewhere

- *Legal Secretaries* (1242)
- Articling students, Quebec notaries and trade mark lawyers (in 4112 *Lawyers and Quebec Notaries*)
- Patent agents (in 4161 *Natural and Applied Science Policy Researchers, Consultants and Program Officers*)

4212 Community and Social Service Workers

Community and Social Service Workers administer and implement a variety of social assistance programs and community services, and assist clients to deal with personal and social problems. They are employed by social service and government agencies, group homes, correctional facilities and other establishments.

Examples of titles classified in this unit group

Addictions Worker
Community Development Worker
Community Service Worker
Crisis Intervention Worker
Developmental Service Worker
Drop-in Centre Worker
Family Service Worker
Financial Assistance Worker
Group Home Worker
Income Maintenance Officer
Life Skills Instructor
Mental Health Worker
Native Outreach Worker
Rehabilitation Worker
Veterans Service Officer
Welfare and Compensation Officer
Women's Centre Co-ordinator
Youth Worker

Main duties

Community and Social Service Workers perform some or all of the following duties:

- Interview clients to obtain case history and background information
- Prepare intake reports
- Assess and investigate eligibility for social benefits
- Meet with clients to assess their progress, give support and discuss any difficulties or problems
- Refer clients to other social services
- Advise and aid recipients of social assistance and pensions
- Counsel and provide assistance to clients living in group homes and half-way houses and supervise their activities
- Provide crisis intervention and emergency shelter services
- Implement life skills workshops, substance abuse treatment programs, youth services programs and other community and social service programs under the supervision of social workers or health care professionals
- Assist in evaluating the effectiveness of treatment programs by tracking clients' behavioural changes and responses to interventions
- Maintain contact with other social service agencies involved with clients to provide information and obtain feedback on clients' overall progress.

Employment requirements

- Completion of a college or university program in social work, counselling or other social science discipline is usually required.
- Previous work experience in a social service environment as a volunteer or in a support capacity may substitute for formal education requirements for some occupations in this unit group.

Additional information

- Progression to professional occupations in social services, such as family and marriage counsellors, social workers, and probation and parole officers, is possible with additional training and/or experience.

Classified elsewhere

- *Employment Counsellors* (4213)
- *Family, Marriage and Other Related Counsellors* (4153)
- *Managers in Social, Community and Correctional Services* (0314)
- *Probation and Parole Officers and Related Occupations* (4155)
- *Program Leaders and Instructors in Recreation and Sport* (5254)
- *School and Guidance Counsellors* (4143)
- *Social Workers* (4152)

4213 Employment Counsellors

Employment Counsellors provide assistance, counsel and information to worker clients on all aspects of employment search and career planning. They also provide counsel and information to employer clients regarding human resource and employment issues. Employment Counsellors are employed primarily by federal and provincial governments but are also employed by large establishments and private employment service agencies. Supervisors of employment counsellors are included in this unit group.

Examples of titles classified in this unit group

Career Counsellor
Employment Counsellor
Occupational Counsellor
Outplacement Counsellor
Relocation Counsellor
Relocation Consultant
Supervisor, Employment Counsellors
Vocational Counsellor

Main duties

Employment Counsellors perform some or all of the following duties:

- Interview clients to obtain employment history, educational background and career goals
- Identify barriers to employment and assist clients to develop job readiness skills and job search strategies
- Advise employers on human resource and other employment related issues
- Administer and interpret tests designed to determine the interests, aptitudes and abilities of a client
- Assess need for assistance such as rehabilitation, financial aid or further vocational training and refer clients to the appropriate services
- Collect labour market information for clients regarding job openings, entry and skill requirements and other occupational information.

Employment requirements

- A bachelor's degree or college diploma in a related field, such as psychology, social services or education, is usually required.
- Completion of secondary school and several years of experience in services related to counselling or in a helping profession may substitute for formal education.

Additional information

- Progression to supervisory positions is possible through experience.
- Mobility to positions in personnel or training is possible.

Classified elsewhere

- *Personnel and Recruitment Officers* (1223)
- *School and Guidance Counsellors* (4143)
- Unemployment insurance officers (in 1228 *Immigration, Unemployment Insurance and Revenue Officers)*
- Vocational rehabilitation counsellors (in 4153 *Family, Marriage and Other Related Counsellors*)

4214 Early Childhood Educators

Early Childhood Educators plan and organize activities for pre-school children and lead children in these activities to encourage their intellectual, physical and emotional growth. They are employed in day-care centres and nursery schools. Early Childhood Educators who are supervisors are included in this group.

Examples of titles classified in this unit group

Child-care Worker, Day Care
Day-care Supervisor
Day-care Worker
Early Childhood Educator
Early Childhood Supervisor
Early Childhood Program Staff
Pre-school Supervisor
Pre-school Teacher

Main duties

Early Childhood Educators perform some or all of the following duties:

- Develop daily activities for children
- Lead children in activities by telling or reading stories, teaching songs, demonstrating the use of simple musical instruments, preparing craft materials and demonstrating their use and taking the children to local points of interest
- Guide and assist children in the development of proper eating, dressing and toilet habits
- Observe children for signs of learning disabilities or emotional problems
- Discuss progress or problems of children with parents and other staff members
- Attend meetings and workshops to develop and discuss new teaching methods
- May supervise and co-ordinate the activities of other early childhood educators and early childhood educator assistants.

Employment requirements

- A bachelor's degree or college diploma in early childhood education or a bachelor's degree in education is required.
- Progression to senior positions, such as day care supervisor, is possible with experience.

Additional information

- In data provided by Statistics Canada, unit groups 4214 and 6473 are combined to form 6470 *Early Childhood Educators and Assistants*.

Classified elsewhere

- *Early Childhood Educator Assistants* (6473)
- *Elementary School and Kindergarten Teachers* (4142)
- Teacher's aides (in 6472 *Elementary and Secondary School Teacher Assistants)*

4215 Instructors and Teachers of Disabled Persons

Instructors and Teachers of Disabled Persons teach physically or mentally disabled children and adults communication techniques, such as braille or sign language, and rehabilitation skills to increase independence and mobility. They are employed in rehabilitation centres and elementary and secondary schools.

Examples of titles classified in this unit group

Instructor, Orientation and Mobility
Teacher for the Hearing Impaired
Teacher of the Blind
Teacher of Braille
Teacher of the Mentally Handicapped
Teacher of the Physically Disabled
Teacher, Rehabilitation
Rehabilitation Instructor
Sign Language Instructor

Main duties

Instructors and Teachers of Disabled Persons perform some or all of the following duties:

- Instruct blind or visually impaired students in reading and writing braille and in the use of special equipment
- Instruct deaf or hearing impaired students in lip-reading, finger spelling and sign language, according to individual communication needs
- Instruct hearing impaired students in formation and development of sounds for speech using hearing aids and other devices
- Instruct physically disabled individuals and their families in the use of rehabilitative techniques, prosthetic devices, wheelchairs and other equipment designed to minimize the effects of a disability
- Assist physically or mentally disabled individuals to develop life skills.

Employment requirements

- A bachelor's degree in education or a related field, such as psychology or social work, is usually required.
- Completion of appropriate training program in rehabilitation or special education is required.
- Instructors of the blind require certification by the Canadian National Institute for the Blind.
- Teachers who work in a public school system require a provincial teaching certificate.

Classified elsewhere

- *Early Childhood Educators* (4214)
- *Early Childhood Educator Assistants* (6473)
- *Elementary School and Kindergarten Teachers* (4142)
- *Elementary and Secondary School Teacher Assistants* (6472)
- *Secondary School Teachers* (4141)

4216 Other Instructors

Instructors in this unit group teach courses, such as motor vehicle or motorcycle driving, sewing or other courses, which are outside of educational institutions and not job-related. They are employed by driving schools, fabric retailers and other commercial establishments or they may be self-employed. This unit group also includes driver's licence examiners, who are employed by provincial governments.

Examples of titles classified in this unit group

Driving Instructor
Driver's Licence Examiner
Instructor, Modelling and Finishing School
Motorcycle Driving Instructor
Sewing Instructor – Non-vocational

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Driving instructors instruct individuals on proper motor vehicle driving skills and traffic regulations, demonstrate and explain the handling and mechanical operation of motor vehicles and supervise individuals during practice driving.
- Driver's licence examiners conduct road test examinations and evaluate the driving ability of applicants for driver's licences.
- Sewing instructors give instruction to students in techniques and skills of sewing, tailoring and dressmaking.
- Modelling and finishing school instructors give instruction on comportment, personal development, make-up application and modelling techniques for fashion shows and magazine advertising.

Employment requirements

- Expertise in the field of instruction must be demonstrated.
- Driving instructors must obtain special licensure as a driving instructor in the province of employment.

Classified elsewhere

- *College and Other Vocational Instructors* (4131)
- *Elementary School and Kindergarten Teachers* (4142)
- *Secondary School Teachers* (4141)

4217 Other Religious Occupations

This unit group includes brothers, nuns, monks, religious education workers and others who provide support to ministers of religion or to a religious community and who perform certain functions associated with the practice of a religion. They may perform these duties in churches, synagogues, temples or other places of worship or in institutions such as schools, hospitals and prisons.

Examples of titles classified in this unit group

Brother
Cantor
Christian Science Practitioner
Deacon
Mohel
Monk
Nun
Religious Education Worker
Salvation Army Field Worker

Main duties

Religious workers in this unit group perform some or all of the following duties:

- Assist at services of public worship and religious rites
- Provide religious education, spiritual guidance and moral support to members of a religious community
- Administer programs providing food, clothing and shelter.

Employment requirements

- Requirements range from completion of secondary school education to a university undergraduate degree, depending on the particular occupation and religion.
- There may be other admittance requirements depending on the particular occupation and religion.

Classified elsewhere

- *Ministers of Religion* (4154)

Major Group 51
PROFESSIONAL OCCUPATIONS IN ART AND CULTURE

511 Librarians, Archivists, Conservators and Curators

5111 Librarians
5112 Conservators and Curators
5113 Archivists

512 Writing, Translating and Public Relations Professionals

5121 Writers
5122 Editors
5123 Journalists
5124 Professional Occupations in Public Relations and Communications
5125 Translators, Terminologists and Interpreters

513 Creative and Performing Artists

5131 Producers, Directors, Choreographers and Related Occupations
5132 Conductors, Composers and Arrangers
5133 Musicians and Singers
5134 Dancers
5135 Actors
5136 Painters, Sculptors and Other Visual Artists

Major Group 52
TECHNICAL AND SKILLED OCCUPATIONS IN ART, CULTURE, RECREATION AND SPORT

521 Technical Occupations in Libraries, Archives, Museums and Galleries

5211 Library and Archive Technicians and Assistants
5212 Technical Occupations Related to Museums and Galleries

522 Photographers, Graphic Arts Technicians and Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts

5221 Photographers
5222 Film and Video Camera Operators
5223 Graphic Arts Technicians
5224 Broadcast Technicians
5225 Audio and Video Recording Technicians
5226 Other Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts
5227 Support and Assisting Occupations in Motion Pictures, Broadcasting and the Performing Arts

523 Announcers and Other Performers

5231 Announcers and Other Broadcasters
5232 Other Performers

524 Creative Designers and Craftspersons

5241 Graphic Designers and Illustrating Artists
5242 Interior Designers
5243 Theatre, Fashion, Exhibit and Other Creative Designers
5244 Artisans and Craftspersons
5245 Patternmakers - Textile, Leather and Fur Products

525 Athletes, Coaches, Referees and Related Occupations

5251 Athletes
5252 Coaches
5253 Sports Officials and Referees
5254 Program Leaders and Instructors in Recreation and Sport

5111 Librarians

Librarians develop, organize and maintain library collections and provide advisory services for users. They are employed in libraries or in a department within a library.

Examples of titles classified in this unit group

Bibliographer
Cataloguer
Librarian
Library Consultant
Supervisor, Library

Main duties

Librarians perform some or all of the following duties:

- Recommend acquisition of books, periodicals, audio-visual and other materials for inclusion in library collection
- Classify and catalogue library materials
- Prepare bibliographies, indexes, reading lists, guides and other finding aids
- Develop systems to access library collections
- Perform manual and on-line reference searches, make interlibrary loans and perform other functions to assist users in accessing library materials
- Provide specialized programs such as storytime reading for children
- Conduct library information and orientation training sessions
- Supervise library technicians, assistants and clerks.

Employment requirements

- A master's degree in library science is required.

Additional information

- Progression to library management positions is possible with experience.

Classified elsewhere

- Library managers (in 0511 *Library, Archive, Museum and Art Gallery Managers*)
- Medical records librarians (in 1413 *Records and File Clerks*)
- School librarians (in 4141 *Secondary School Teachers* and 4142 *Elementary School and Kindergarten Teachers*)

5112 Conservators and Curators

Conservators restore and conserve museum and gallery artifacts. Curators research and recommend the acquisition of museum and gallery artifacts. Conservators and Curators are employed in museums and art galleries. Conservators may be self-employed.

Examples of titles classified in this unit group

Assistant Curator
Conservator
Curator

Main duties

Conservators perform some or all of the following duties:

- Restore and conserve paintings, photographs, sculptures, furniture, pottery and other museum and art gallery artifacts
- Examine artifacts using various scientific techniques and other means to determine the most appropriate method of restoring them
- Provide advice on display and storage of museum and gallery artifacts to ensure proper maintenance and preservation
- Provide consultation to museums, art galleries or private individuals
- Supervise conservation technicians and other museum technicians.

Curators perform some or all of the following duties:

- Recommend the acquisition of paintings, photographs, sculptures, documents and other museum and art gallery artifacts
- Research origins and history of artifacts
- Develop storyline and theme of displays and exhibitions
- Co-ordinate the storage of collections and setting-up of displays and exhibitions
- Supervise curatorial assistants and other museum technicians.

Conservators and curators may specialize in a particular type of collection or material.

Employment requirements

- Conservators require a master's degree in art conservation
  or
  Completion of a three-year college program in conservation technology and several years of experience in conservation work.
- Curators require a master's or bachelor's degree in museology, art history or a field related to their specific area of work.

Additional information

- Progression to museum or art gallery management positions is possible with experience.

Classified elsewhere

- Curatorial assistants (in 5212 *Technical Occupations Related to Museums and Galleries*)
- Museum designers (in 5243 *Theatre, Fashion, Exhibit and Other Creative Designers*)
- Museum educators (in 5124 *Professional Occupations in Public Relations and Communications*)

5113 Archivists

Archivists acquire, research and store historical documents, photographs, maps, audio-visual material and other archival materials. Archivists are employed in archives and libraries, by government departments and agencies and by private sector organizations.

Examples of titles classified in this unit group

Archivist

Chief Archivist

Main duties

Archivists perform some or all of the following duties:

- Appraise and acquire archival materials to develop and maintain archival collection
- Authenticate historical documents and records and research the origins and historical significance of archival materials
- Ensure preservation and appropriate storage of historical documents, photographs, maps, audio-visual material, manuscripts, public and corporate records and other archival materials
- Organize archival records and develop classification systems to allow access to archival materials
- Assist users in accessing archival materials
- Perform manual and automated reference searches for users.

Employment requirements

- A master's degree in archival studies, library science or history is usually required.

Additional information

- Progression to archive management positions is possible with experience.

Classified elsewhere

- *Librarians* (5111)
- *Library, Archive, Museum and Art Gallery Managers* (0511)
- Archive assistants (in *5211 Library and Archive Technicians and Assistants*)

5121 Writers

Writers plan, research and write books, scripts, plays, essays, speeches, manuals, specifications and other non-journalistic articles for publication or presentation. They are employed by advertising agencies, governments, large corporations, private consulting firms, publishing firms and other establishments, or they may be self-employed.

Examples of titles classified in this unit group

Advertising Copywriter
Copywriter
Essayist
Humorist
Novelist
Playwright
Poet
Scientific Writer
Script Writer
Short-story Writer
Specifications Writer
Speech Writer
Technical Writer
Television Writer
Writer

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Novelists, playwrights, script writers, poets and other creative writers conceive and write novels, plays, scripts, poetry and other material for publication or presentation and may conduct research to establish factual content and to obtain other necessary information.
- Technical writers analyze material, such as specifications, notes and drawings, and write manuals, user guides and other documents to explain clearly and concisely the installation, operation and maintenance of electronic, mechanical and other equipment.
- Copywriters study and determine selling features of products and services and write text for advertisements and commercials.

Writers may specialize in a particular subject or type of writing.

Employment requirements

- Technical writers usually require a university degree in the area of specialization, such as computer science or engineering.
- Copywriters usually require a university degree or college diploma in English, French, marketing or other discipline.
- Creative writing programs are offered by universities and colleges.
- Talent and ability, as demonstrated by a portfolio of work, are important hiring criteria.

Classified elsewhere

- *Editors* (5122)
- *Journalists* (5123)
- *Professional Occupations in Public Relations and Communications* (5124)
- *Translators, Terminologists and Interpreters* (5125)
- Song writers (in 5132 *Conductors, Composers and Arrangers*)

5122 Editors

Editors review, evaluate and edit manuscripts, articles, news reports and other material for publication or broadcast, and co-ordinate the activities of writers, journalists and other staff. They are employed by publishing firms, magazines, journals, newspapers, radio and television networks and stations, and by companies and government departments that produce publications such as newsletters, handbooks and manuals. Editors may also work on a freelance basis.

Examples of titles classified in this unit group

Advertising Editor
Art Editor
Associate Editor
Copy Editor
Editor
Manuscript Editor
News Editor
Photo Editor
Production Editor
Script Editor
Sports Editor
Technical Editor

Main duties

Editors perform some or all of the following duties:

- Evaluate suitability of manuscripts, articles, news copy and wire service dispatches for publication or broadcast and recommend or make changes in content, style and organization
- Read and edit copy to be published or broadcast to detect and correct errors in spelling, grammar and syntax, and shorten or lengthen copy as space or time requires
- Confer with authors, staff writers, reporters and others regarding revisions to copy
- Plan layout or format of copy according to space or time allocations and significance of copy
- Plan and co-ordinate activities of staff and assure production deadlines are met
- Plan coverage of upcoming events and assign work accordingly
- May negotiate royalties with authors and initiate payments to freelance staff.

Editors may specialize in a particular subject area, such as news, sports or features, or in a particular type of publication, such as books, magazines, newspapers or manuals.

Employment requirements

- A bachelor's degree in journalism, English, French or a related discipline is usually required.
- Several years of experience in journalism, writing, publishing or a related field are usually required.

Additional information

- Progression to management positions, such as editor-in-chief or managing editor, is possible with experience.

Classified elsewhere

- Editorial assistants (in 1452 *Correspondence, Publication and Related Clerks*)
- Film editors (in 5131 *Producers, Directors, Choreographers and Related Occupations*)
- *Journalists* (5123)
- Managing editors (in 0512 *Managers in Publishing, Motion Pictures, Broadcasting and Performing Arts*)
- Map editors (in 2255 *Mapping and Related Technologists and Technicians*)
- Sound editors (in 5225 *Audio and Video Recording Technicians*)
- *Writers* (5121)

5123 Journalists

Journalists research, investigate, interpret and communicate news and public affairs through newspapers, television, radio and other media. Journalists are employed by radio and television networks and stations, newspapers and magazines. Journalists may also work on a freelance basis.

Examples of titles classified in this unit group

Book Reviewer
Broadcast Journalist
Columnist
Correspondent
Investigative Reporter
Journalist
News Analyst
News Commentator
Newspaper Critic
Network Reporter
Reporter
Researcher, Radio or Television
Television News Anchorperson

Main duties

Journalists perform some or all of the following duties:

- Collect local, national and international news through interviews, investigation and observation
- Write news stories for publication and broadcast
- Receive, analyze and verify news and other copy for accuracy
- Arrange for and conduct interviews as part of research and for radio and television programs
- Research and report on developments in specialized fields such as medicine, science and technology
- Prepare regular feature columns and stories on specialized topics
- Write editorials and commentaries on topics of current interest to stimulate public interest and express the views of a publication or broadcasting station
- Write critical reviews of literary, musical and other artistic works based on knowledge, judgement and experience.

Journalists may specialize in print or non-print media, in particular issues such as political affairs or entertainment news, or in a particular geographic area.

Employment requirements

- A university degree or college diploma in journalism or a related field is usually required.

Classified elsewhere

- *Announcers and Other Broadcasters* (5231)
- *Editors* (5122)
- *Writers* (5121)
- Photojournalists (in 5221 *Photographers*)

5124 Professional Occupations in Public Relations and Communications

This unit group includes specialists in public relations and communications who develop and implement communication strategies and information programs, publicize activities and events, and maintain media relations on behalf of businesses, governments and other organizations. They are employed by consulting firms, corporations, associations, government, social agencies and other organizations, or they may be self-employed.

Examples of titles classified in this unit group

Communications Officer
Communications Specialist
Fund-Raising Consultant
Information Officer
Media Co-ordinator
Media Relations Officer
Museum Educator
Press Secretary
Public Affairs Officer
Public Relations Consultant
Publicist
Publicity Agent

Main duties

Specialists in public relations and communications perform some or all of the following duties:

- Develop, implement and evaluate communications strategies and programs designed to inform clients, employees and the general public of initiatives and policies of businesses, governments and other organizations
- Gather, research and edit material for internal and external audiences
- Prepare or oversee preparation of reports, briefs, bibliographies, speeches, presentations and press releases
- Develop and organize workshops, meetings, ceremonies and other events for publicity, fundraising and information purposes
- Prepare and deliver educational and publicity programs to increase awareness of museums, galleries and other tourist attractions
- Initiate and maintain contact with the media
- Arrange interviews and news conferences
- Act as spokesperson for an organization and answer written and oral inquiries
- Assist in the preparation of brochures, reports, newsletters and other material.

Employment requirements

- A university degree or college diploma in public relations, communications, journalism or a discipline related to a particular subject matter is usually required.

Additional information

- Progression to managerial positions in public relations and communications is possible with additional training and experience.

Classified elsewhere

- Advertising specialists (in 1122 *Professional Occupations in Business Services to Management*)
- Marketing consultants (in 4163 *Economic Development Officers and Marketing Researchers and Consultants*)
- Public relations clerks (in 1453 *Customer Service, Information and Related Clerks*)
- Public relations managers (in 0611 *Sales, Marketing and Advertising Managers*)
- *Writers* (5121)

5125 Translators, Terminologists and Interpreters

Translators translate written material from one language to another. Terminologists conduct research required to translate and interpret technical, professional and scientific vocabulary and material. Interpreters translate oral communication, such as speeches, proceedings and dialogue, from one language to another. Translators, Terminologists and Interpreters are employed by private translation and interpreting agencies, government, large private corporations, international organizations, the media or they may be self-employed.

Examples of titles classified in this unit group

Conference Interpreter
Court Interpreter
Interpreter
Interpreter for the Deaf
Legal Terminologist
Literary Translator
Medical Terminologist
Sign Language Interpreter
Terminologist
Translator
Translator, Official Languages

Main duties

Translators perform some or all of the following duties:

- Translate a variety of written material such as correspondence, reports, legal documents, technical specifications and textbooks from one language to another, maintaining the content, context and style of the original material
- Revise, edit, proofread and check translated material
- May train and supervise other translators.

Terminologists perform some or all of the following duties:

- Conduct documentary and terminological research for the preparation of glossaries, technological files, dictionaries and resource centres
- Provide consultative services to translators, interpreters and technical writers preparing legal, scientific or other documents requiring specialized terminologies.

Interpreters perform some or all of the following duties:

- Interpret oral communication from one language to another either simultaneously (as the speaker speaks) or consecutively (after the speaker speaks)
- Translate sign language to a spoken language and vice versa
- Interpret language for individuals and small groups travelling in Canada and abroad
- May train other interpreters.

Translators, terminologists and interpreters specialize in a particular language, such as French, English, Russian or Spanish, and may specialize in a particular technical area, such as law, medicine or agriculture.

Employment requirements

- A bachelor's degree in translation or a related discipline is required, and specialization in interpretation, translation and terminology at the graduate level is usually required.
- Sign language interpreters require a college or other training program in sign language interpretation.
- A translator's or interpreter's certificate issued by the Canadian Translators and Interpreter's Council may be required.
- Fluency in three languages is usually required for translators and interpreters employed by international organizations.
- In Quebec, membership in the professional corporation for translators and interpreters is mandatory.

Classified elsewhere

- *Writers* (5121)
- Language instructors (in 4131 *College and Other Vocational Instructors*)
- Linguists (in 4169 *Other Professional Occupations in Social Science*))

5131 Producers, Directors, Choreographers and Related Occupations

This unit group includes producers, directors, choreographers and others who oversee and control the technical and artistic aspects of film, television, radio, dance and theatre productions. They are employed by film production companies, radio and television stations, broadcast departments in advertising companies, sound recording studios, record production companies and dance companies. They may also be self-employed.

Examples of titles classified in this unit group

Art Director
Artistic Director
Choreographer
Cinematographer
Director
Director of Photography
Film Editor
Filmmaker
Producer
Producer/Director
Radio Producer
Record Producer
Stage Director
Technical Director
Television Producer

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Film, television and radio producers plan, organize and co-ordinate the production of motion pictures, television shows and radio programs; engage directors and other production personnel; and determine treatment, scope and scheduling of production.
- Directors interpret scripts, select the cast and advise in the interpretation and delivery of the performance; direct rehearsals, filmings, broadcasts and performances; and confer with crew and production specialists throughout production and post-production to achieve desired presentation.
- Choreographers create dances for film, theatre and television performances that convey stories, ideas and moods, and direct rehearsals for dancers to achieve desired interpretation.
- Art directors plan, organize and direct the artistic aspects of motion pictures, stage productions and television shows by overseeing the design of sets, costumes, furnishings and props to create portrayals of period and setting.
- Film editors edit motion picture film and arrange film segments into sequences to achieve continuity and desired dramatic, comedic and thematic effects.
- Record producers plan and co-ordinate the production of musical recordings, direct musicians and singers during rehearsals and recordings, and manage technicians involved in duplicating, dubbing and mastering of recordings.
- Directors of photography co-ordinate and direct the photography of motion pictures, supervise camera operators and other crews, and determine lighting, lenses, camera angles, backgrounds and other elements to achieve desired visual effect.

Employment requirements

- Producers, directors and film editors usually require a university degree or college diploma in the performing arts, broadcasting, theatre production or film studies
  and
  Experience in a technical or production occupation in motion pictures, broadcasting or theatre.
- Choreographers require a university degree or college diploma in dance, or a period of study at a school of dance
  and
  Extensive training with a dance company.
- Record producers usually require a university degree or college diploma in music or the recording arts
  and
  Experience in a technical or production occupation in the recording arts.
- Directors of photography usually require a university degree or college diploma in film studies or cinematography
  and
  Experience in camera operation or other technical occupation in video or motion picture production.
- Demonstrated creative ability is required for all occupations in this unit group.

5131 Producers, Directors, Choreographers and Related Occupations

Classified elsewhere

- *Managers in Publishing, Motion Pictures, Broadcasting and Performing Arts* (0512)
- *Photographers, Graphic Arts Technicians and Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts* (522)

5132 Conductors, Composers and Arrangers

This unit group includes those who conduct bands and orchestras, compose musical works and arrange instrumental and vocal compositions. They are employed by symphony orchestras, bands, choirs and sound recording companies, or they may be self-employed.

Examples of titles classified in this unit group

Arranger
Band Leader
Choir Director
Composer
Conductor
Lyricist
Music Adapter
Musical Director
Orchestrator
Song Writer

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Conductors select and interpret musical works and lead bands, orchestras and choirs during rehearsals and performances.
- Composers create musical compositions such as television and film scores, theme music, songs and symphonies.
- Arrangers adapt and modify musical compositions to convey desired themes and to suit particular instrumental and vocal performances.

Conductors, composers and arrangers usually specialize in a particular type of music such as classical, country, jazz or popular.

Employment requirements

- A university degree in music or completion of a program at a music academy or school of music is usually required.
- A period of specialized study related to conducting, composing or arranging is usually required.
- Experience as a musician is required.
- Musical and creative talent and ability, as demonstrated by a portfolio of work, are important hiring criteria.

Additional information

- Composers often work as arrangers.

Classified elsewhere

- *Musicians and Singers* (5133)
- *Producers, Directors, Choreographers and Related Occupations* (5131)

5133 Musicians and Singers

This unit group includes musicians, singers and teachers of vocal and instrumental music. Musicians and singers perform with orchestras, opera companies and popular bands in establishments such as concert halls, lounges and theatres and in film, television and recording studios. Music teachers teach in conservatories, academies and private homes.

Examples of titles classified in this unit group

Accompanist
Church Organist
Guitar Player
Instrumentalist
Musician
Music Teacher
Opera Singer
Percussionist
Recording Artist
Session Musician
Singer
Vocalist

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Musicians play one or more instruments as soloists or as members of a musical group before audiences or for recording purposes.
- Singers sing musical arrangements as soloists or as members of vocal groups before audiences or for recording purposes.
- Teachers of music or voice teach technique, interpretation and music theory to students through private or group lessons.

Musicians and singers usually specialize in specific types of music such as classical, country, jazz, opera or popular music.

Employment requirements

- Musical training from a university or college or through private instruction is usually required.
- Members of orchestras and other professional classical musicians and singers usually require a university degree in music.
- Musical talent and ability, as demonstrated during an audition, are important hiring criteria.

Classified elsewhere

- *Conductors, Composers and Arrangers* (5132)
- Professors of music (in 4121 *University Professors*)
- Secondary school music teachers (in 4141 *Secondary School Teachers*)

5134 Dancers

This unit group includes dancers and dance teachers. Dancers are employed by ballet and dance companies, television and film productions and night clubs and similar establishments. Dance teachers are employed by dance academies and dance schools.

Examples of titles classified in this unit group

Ballet Dancer
Ballet Teacher
Ballroom Dancing Teacher
Dance Instructor
Dancer
Folkloric Dancer
Interpretive Dancer
Tap Dancer

Main duties

Dancers perform some or all of the following duties:

- Practise and rehearse dance routines under direction or instruction to achieve desired interpretation and presentation
- Perform dances as soloists or as members of groups before live audiences or for film or television
- Train and exercise to maintain the required levels of ability and fitness
- May choreograph their own performances.

Dance Teachers perform some or all of the following duties:

- Teach dance technique and artistic interpretation to amateur and professional individuals and groups
- Teach the techniques, cultural origins and symbolic meanings of native, ethnic and folkloric dances
- Teach recreational dancing lessons such as ballroom dancing
- Prepare dance students for specific auditions and performances.

Dancers may specialize in specific types of dance such as ballet, ballroom, folk, jazz or modern.

Employment requirements

- A university degree or college diploma in dance
  or
  Graduation from a private dance school or academy may be required.
- Talent and ability, as demonstrated during an audition, are important hiring criteria.
- Dance teachers usually require experience as dancers.

Classified elsewhere

- Choreographers (in 5131 *Producers, Directors, Choreographers and Related Occupations*)
- *Other Performers* (5232)

5135 Actors

Actors perform roles in motion picture, television, theatre and radio productions to entertain audiences. Actors are employed by motion picture, television, theatre and other production companies. This unit group includes acting teachers employed by private acting schools.

Examples of titles classified in this unit group

Acting Teacher
Actor
Comedian
Drama Coach

Main duties

Actors perform some or all of the following duties:

- Study and rehearse lines, gestures and expressions to interpret a role
- Portray roles in motion pictures, television shows, theatre productions, radio dramas, commercials and other productions
- Sing or dance as required by specific roles
- May perform comedy acts in nightclubs alone or as members of comedy troupes.

Acting teachers perform some or all of the following duties:

- Train students in interpretation of scripts, speech, movement, and dramatic theory
- Prepare acting students for specific auditions and performances.

Employment requirements

- Demonstrated ability, based on an audition or previous acting roles, is an important hiring criteria.
- Acting programs are offered at universities, colleges and private acting schools.
- Acting teachers usually require experience as actors.

Classified elsewhere

- *Announcers and Other Broadcasters* (5231)
- *Dancers* (5134)
- *Musicians and Singers* (5133)
- *Other Performers* (5232)
- Drama professors (in 4121 *University Professors*)

5136 Painters, Sculptors and Other Visual Artists

Painters, Sculptors and Other Visual Artists create original paintings, drawings, sculptures, etchings, engravings and other artistic works. They are usually self-employed. This group also includes art instructors and teachers, who are usually employed by private art schools.

Examples of titles classified in this unit group

Art Instructor
Artist
Ink Sketcher
Painter
Portrait Painter
Sculptor
Silkscreen Artist

Main duties

A summary of the main duties for some occupations in this unit group follows:

- Painters create drawings, paintings and other original artwork using oils, pastels, watercolours, charcoal, ink and other materials.
- Sculptors create sculptures, statues and other three-dimensional artwork by shaping, carving and fabricating materials such as clay, stone, wood or metal.
- Art instructors and teachers teach students in the techniques and methods of drawing, painting, sculpting and other forms of artistic expression.

Employment requirements

- Creative ability and talent, as demonstrated by a portfolio of work, are required. Art programs are offered at universities, colleges and private art schools.
- Art instructors and teachers may be required to have a university degree or college diploma in a field related to art.

Classified elsewhere

- *Artisans and Craftspersons* (5244)
- *Graphic Designers and Illustrating Artists* (5241)

5211 Library and Archive Technicians and Assistants

Library and Archive Technicians and Assistants assist users in accessing library or archive resources, assist librarians or archivists in cataloguing new acquisitions and conduct reference searches. Library and Archive Technicians and Assistants are employed by libraries and archives and by other establishments with library or archive services.

Examples of titles classified in this unit group

Archive Assistant
Circulation Assistant
Library Assistant
Library Technician
Reference Assistant

Main duties

Library and Archive Technicians and Assistants perform some or all of the following duties:

- Assist library or archive users in accessing books, films, photographs, maps, documents and other library materials or archival records
- Catalogue new library or archive materials under the direction of a librarian or archivist
- Receive library or archive books and other materials
- Issue for circulation library books and other materials
- Perform manual and on-line reference searches and make interlibrary loans for users
- Assist librarians in giving tours and providing children's and other specialized library programs
- Assist archivists in arranging for safe storage of historical records and documents.

Employment requirements

- A university degree in a social science discipline or completion of a college library technician program is usually required.

Classified elsewhere

- *Archivists* (5113)
- *Librarians* (5111)
- *Library Clerks* (1451)

5212 Technical Occupations Related to Museums and Galleries

This group includes workers who classify and catalogue museum and gallery artifacts, construct and install exhibits and displays, restore, maintain and store museum and gallery collections, frame artwork, conduct guided tours and perform other functions in support of curatorial and conservation activities. They are employed in museums and galleries. Picture framers and taxidermists may also be employed in retail settings or may be self-employed.

Examples of titles classified in this unit group

Conservation Technician
Curatorial Assistant
Museum Cataloguer
Museum Guide
Museum Extension Officer
Museum Interpreter
Museum Registrar
Museum Technician
Picture Framer
Preparator
Restoration Technician
Taxidermist

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Conservation and restoration technicians assist in the restoration and conservation of artifacts under the direction of a conservator.
- Curatorial assistants assist in the research, handling and storage of artifacts.
- Museum guides and interpreters conduct tours of museum and gallery exhibitions and displays, answer inquiries and provide information concerning exhibits.
- Museum extension officers assist with the planning and development of travelling exhibitions and special events.
- Museum registrars and cataloguers classify and assign registration numbers to artifacts and supervise inventory control.
- Preparators construct displays and dioramas, build models, install artifacts in displays and prepare artifacts for storage and shipping.
- Picture framers fabricate custom frames, measure and cut mats, mat enhancements and glass, and mount paintings, photographs and other art work.
- Taxidermists prepare and mount skins of birds or animals for preservation, scientific or display purposes.

Technical museum and gallery workers may specialize in a specific type of collection.

Employment requirements

- Registrars and cataloguers may require a university degree in a field related to museum and gallery work.
- For other occupations in this unit group, completion of a college program in museum studies or conservation technology
  or
  Other technical or on-the-job training programs related to the work are required.

Classified elsewhere

- Assistant curators (in 5112 *Conservators and Curators*)
- Museum exhibit designers (in 5243 *Theatre, Fashion, Exhibit and Other Creative Designers*)

5221 Photographers

Photographers operate still cameras to photograph people, events, scenes, materials, products and other subjects. Photographers are employed by photographic studios, newspapers, magazines, museums and government or they may be self-employed.

Examples of titles classified in this unit group

Aerial Photographer
Commercial Photographer
Forensic Photographer
Industrial Photographer
Photographer
Photojournalist
Portrait Photographer
Scientific Photographer

Main duties

Photographers perform some or all of the following duties:

- Study requirements of a particular assignment and decide on type of camera, film, lighting and background accessories to be used
- Determine picture composition, make technical adjustments to equipment and photograph subject
- May process exposed film
- May use airbrush or other techniques to retouch negatives.

Photographers may specialize in areas such as portrait photography, commercial photography, scientific photography or photojournalism.

Employment requirements

- A bachelor's degree in visual arts with specialization in photography
  or
  Completion of specialized training in photography in high school or college
  or
  Extensive on-the-job training under the supervision of a photographer is required.
- Creative and technical ability, as demonstrated by a portfolio of work, are required.

Classified elsewhere

- *Film and Video Camera Operators* (5222)

5222 Film and Video Camera Operators

Film and Video Camera Operators operate motion picture and video cameras and related equipment to record news, live events, films, videos and television broadcasts. They are employed by television networks and stations, motion picture and video production companies, or they may be self-employed.

Examples of titles classified in this unit group

Assistant Camera Operator
Camera Operator
Electronic News Gathering (ENG) Camera Operator
Film Camera Operator
Motion Picture Camera Operator
Studio Camera Operator
Television Camera Operator
Video Camera Operator

Main duties

Film and Video Camera Operators perform some or all of the following duties:

- Meet with director and senior members of camera crew to discuss assignment and determine filming sequences, camera movements and picture composition
- Select and set up camera equipment to be used, and attach lens, filters and film magazine to camera
- Adjust focus, exposure, lighting and other camera settings
- Operate film or video camera to record news, live events, films, videos and television broadcasts
- Label and record contents of exposed film, and complete report sheets
- Test and maintain equipment.

Employment requirements

- Completion of a college or other program in broadcasting, audiovisual technology or a related field
  and
  Experience as a camera assistant are usually required.

Additional information

- Progression to supervisory positions is possible with experience.
- Progression to director of photography positions is possible with additional training and experience.

Classified elsewhere

- *Audio and Video Recording Technicians* (5225)
- *Photographers* (5221)
- Camera assistants (in 5227 *Support and Assisting Occupations in Motion Pictures, Broadcasting and the Performing Arts*)
- Filmmakers and directors of photography (in 5131 *Producers, Directors, Choreographers and Related Occupations*)
- Video artists (in 5136 *Painters, Sculptors and Other Visual Artists*)
- Video transmission operators (in 5224 *Broadcast Technicians*)

5223 Graphic Arts Technicians

This unit group includes workers who produce and assemble artwork, photographs, lettering and other graphic art according to conceptual layouts and specifications, and make designs camera-ready for printing. They are employed by publishing, advertising and printing establishments, and by television and film production companies.

Examples of titles classified in this unit group

Animation Painter
Copy Stylist
Lettering Artist
Mechanical Artist
Paste-up Artist
Sign Painter
Silkscreen Technician
Stencil Maker

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Animation painters paint or ink individual cells of animated film according to animator's specifications.
- Copy stylists designate type size and face to conform with layout and allocated space of copy to be printed on advertising pages of periodicals or catalogues.
- Paste-up artists arrange and mount art elements, photographs and text on paper according to designer's or artist's layout to provide camera-ready copy; scale and crop art elements; and prepare rules, borders, and other mechanical elements.
- Sign painters lay out and paint letters, figures and designs, for advertisements, billboards and business signs, using layout instruments and painting equipment.
- Stencil makers lay out and cut stencils to desired specifications.
- Lettering artists paint and draw precise lettering for advertisements, books and other printed materials.

Employment requirements

- A university degree or college diploma in commercial or graphic arts is usually required.
- On-the-job training may substitute for education for persons with demonstrated technical and artistic skills.

Additional information

- Progression to graphic designer positions is possible with experience.

Classified elsewhere

- *Correspondence, Publication and Related Clerks* (1452)
- *Graphic Designers and Illustrating Artists* (5241)
- Desktop publishing specialists (in 1423 *Typesetters and Related Occupations*)
- Graphic arts camera operators (in 9472 *Camera, Platemaking and Other Pre-press Occupations*)

5224 Broadcast Technicians

Broadcast Technicians operate control consoles and other broadcasting equipment to route radio and television broadcasts through transmitters and network lines and to monitor radio and television broadcasts. They are employed by radio and television broadcasting networks and stations.

Examples of titles classified in this unit group

Broadcast Engineer
Broadcast Technician
Broadcast Transmitter Operator
Master Control Room (MCR) Technician
Mobile Broadcast Equipment Operator
Regional Transmitter Technician
Senior MCR Operator
Shortwave Receiving Station Technician
Switcher, Broadcasting
Video Transmission Operator

Main duties

Broadcast Technicians perform some or all of the following duties:

- Monitor broadcast quality of live and taped radio and television programs
- Operate and monitor broadcasting studio microwave and other transmitting equipment to broadcast and receive signals
- Make emergency repairs to equipment and substitute programs in case of signal failure
- Set up and operate consoles to pick up feed sources from different locations and put to air radio or television programs and commercials
- May supervise other broadcast technicians.

Employment requirements

- Completion of a college program in broadcasting technology is usually required.
- Senior and supervisory positions in this unit group require experience.

Classified elsewhere

- *Audio and Video Recording Technicians* (5225)
- *Film and Video Camera Operators* (5222)
- *Other Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts* (5226)

5225 Audio and Video Recording Technicians

Audio and Video Recording Technicians operate equipment to record, mix and edit sound, music and videotape, for motion pictures, television and radio programs, videos, recordings and live events. They are employed by film, video and concert production companies, sound recording firms, and by radio and television networks and stations.

Examples of titles classified in this unit group

Audio Technician
Audiovisual Technician
Post-Production Technician
Radio Technician
Recording Engineer
Recording Studio Technician
Sound Effects Editor
Sound Engineer
Sound Mixer
Sound Technician
Video and Sound Recorder
Video Recording Technician

Main duties

Audio and Video Recording Technicians perform some or all of the following duties:

- Operate audio equipment to record and edit music, dialogue and sound effects for films, videos, radio and television programs and recordings
- Operate videotape recording and editing equipment to record videos, television programs, concerts and live events, and to edit video tape after production
- Operate audio consoles to mix music and sound at concerts and live events
- Operate dubbing machines to play back edited dialogue, music and sound effect tracks from different sources, in synchronization with motion picture film
- May supervise and co-ordinate the work of other audio and video recording technicians.

Employment requirements

- Completion of a college or other program in recording engineering, audiovisual technology or a related field
  or
  Experience as a recording studio assistant is usually required.
- Senior occupations in this unit group, such as recording and sound engineers, require experience.

Classified elsewhere

- *Broadcast Technicians* (5224)
- *Film and Video Camera Operators* (5222)
- *Other Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts* (5226)
- Film editors (in 5131 *Producers, Directors, Choreographers and Related Occupations*)

5226 Other Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts

This unit group includes a range of technical and supervisory workers who co-ordinate and perform specific activities for television, radio and motion picture productions, news broadcasts, theatre and stage productions, and other live or recorded productions. They are employed by television and radio stations and networks, recording studios, motion picture and video production companies and by theatre and stage companies.

Examples of titles classified in this unit group

Assistant Director
Casting Agent
Floor Director
Gaffer
Key Grip
Lighting Technician
Make-up Artist
Program Co-ordinator, Broadcasting
Special Effects Technician
Stage Manager
Stage Technician
Stunt Co-ordinator
Theatre Technician
Wardrobe Supervisor

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Floor directors co-ordinate camera operators and other technical staff, and cue announcers, actors and performers during news broadcasts and television program tapings.
- Key grips supervise grips, gaffers and stagehands who rig, place, move and dismantle lights, sets, backdrops, scenery and other stage equipment.
- Gaffers and lighting technicians set up, operate and make repairs to lights and other electrical equipment in studios and on sets and stages.
- Stunt co-ordinators and special effects technicians design and co-ordinate special effects such as fires, explosions and crashes.
- Make-up artists apply cosmetic and special effects make-up on actors and other performers.
- Wardrobe supervisors oversee the acquisition and maintenance of costumes and wardrobes.
- Other workers in this unit group prepare television and radio schedules; audition and cast performers for roles; and, schedule and oversee rehearsals.

Employment requirements

- For most occupations in this unit group, completion of a college program in broadcasting, theatre arts or a related field *and*
  Several years of experience in a related support or assisting occupation in motion pictures, broadcasting or the performing arts are required.
- For gaffers, lighting technicians, key grips and other stage technicians, completion of a college program or other specialized training program in technical production for theatre is required.

Additional information

- There may be an overlap in duties among occupations in this unit group, depending on the size of the production or broadcasting studio.

Classified elsewhere

- *Audio and Video Recording Technicians* (5225)
- *Broadcast Technicians* (5224)
- *Film and Video Camera Operators* (5222)
- *Support and Assisting Occupations in Motion Pictures, Broadcasting and the Performing Arts* (5227)
- Lighting designers (in 5243 *Theatre, Fashion, Exhibit and Other Creative Designers*)

5227 Support and Assisting Occupations in Motion Pictures, Broadcasting and the Performing Arts

This unit group includes workers who assist technical workers and perform other support duties related to broadcasting and to the production of motion pictures and the performing arts. They are employed by television and radio stations and networks, recording studios, motion picture and video production companies and by theatre and stage companies. This unit group also includes motion picture projectionists. They are employed by movie theatres.

Examples of titles classified in this unit group

Boom Grip
Camera Crane Operator
Grip
Lighting Assistant
Motion Picture Projectionist
Production Assistant, Broadcasting
Projectionist
Prompter
Props Person
Rigger
Script Assistant
Set Builder
Set Dresser
Special Effects Assistant
Spotlight Operator
Stagehand
Wardrobe Attendant

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Grips set up and operate mobile camera platforms, microphone booms and lighting equipment.
- Motion picture projectionists load film reels onto movie theatre projectors, adjust focus, sound levels and other projector and theatre settings, and maintain projection equipment.
- Props persons and set dressers research, build and maintain props and other set decorations.
- Script assistants distribute scripts to actors, keep detailed notes of all actions, positions and camera angles, and photograph and date scenes.
- Stagehands and riggers rig, place, move and dismantle sets, backdrops, scenery and other stage equipment.
- Wardrobe attendants clean, maintain, transport and store costumes, and assist performers to dress in costumes.

Employment requirements

- Completion of secondary school is usually required.
- Most occupations in this unit group require completion of college courses in broadcasting, theatre arts or a related field
  or
  A period of on-the-job training.
- Projectionists in Nova Scotia, Quebec, Ontario and Alberta are required to complete a licensed apprenticeship program.
- Projectionists are required to be licenced by their province of employment.

Additional information

- Progression to related technical occupations in motion pictures, broadcasting or the performing arts is possible with additional training or experience.
- There may be an overlap in duties among occupations in this unit group, depending on the size of the production or broadcasting studio.

Classified elsewhere

- *Audio and Video Recording Technicians* (5225)
- *Broadcast Technicians* (5224)
- *Film and Video Camera Operators* (5222)
- *Other Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts* (5226)

5231 Announcers and Other Broadcasters

Announcers and Other Broadcasters read news, sports, weather and commercial messages and host entertainment and information programs for broadcast on radio or television. They are primarily employed by radio and television stations and networks and by commercial firms that produce advertisements for radio or television.

Examples of titles classified in this unit group

Announcer
Broadcaster
Disk Jockey
News Reader
Radio Host/Hostess
Sports Announcer
Talk Show Host/Hostess
Television Host/Hostess
Traffic Reporter
Weather Reporter

Main duties

Announcers and Other Broadcasters perform some or all of the following duties:

- Select and introduce music, videos and other entertainment material for broadcast and make commercial and public service announcements
- Act as host/hostess or master of ceremonies, introduce and interview guests and conduct proceedings of shows or programs
- Read news, sports and weather for radio and television
- Report on weather conditions using information provided by weather forecasting services
- Report on traffic conditions by maintaining contact with external sources of information or by observing traffic from air or land vehicle
- May present own material or material prepared by others.

Employment requirements

- Completion of a college radio or television arts program is usually required.
- Practical training, such as work at a college radio station, may be required.
- Talent and ability, as demonstrated during an audition, are important hiring criteria.

Additional information

- Progression to occupations in journalism is possible for those with an educational background in journalism or a related field.

Classified elsewhere

- Broadcast journalists who prepare and present their own reports (in 5123 *Journalists*)
- *Support and Assisting Occupations in Motion Pictures, Broadcasting and the Performing Arts* (5227)

5232 Other Performers

This unit group includes circus performers, magicians, models, puppeteers and other performers not elsewhere classified. They are employed by circuses, nightclubs, theatre, advertising and other production companies or may be self-employed.

Examples of titles classified in this unit group

Acrobat
Busker
Circus Performer
Clown
Magician
Model
Puppeteer
Ventriloquist

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Buskers entertain passers-by on sidewalks and in parks with magic tricks, juggling acts, short dramatic works and other entertaining displays.
- Circus performers such as trapeze artists, high-wire walkers, clowns and jugglers entertain audiences with thrilling and humorous acts.
- Magicians and illusionists perform sleight-of-hand tricks, disappearing acts and other illusions.
- Models display clothing and merchandise in commercials, advertisements and fashion shows and pose for artists and photographers.
- Puppeteers operate puppets and marionettes.

Employment requirements

- Circus performers and acrobats may require a period of study at a circus school.
- Completion of modelling courses is usually required for models.
- Training for other occupations in this unit group is often obtained under the guidance of a practitioner.
- Talent and ability, as demonstrated during an audition, are important hiring criteria.

Additional information

- There is little mobility between the different occupations in this unit group.

Classified elsewhere

- *Actors* (5135)
- *Dancers* (5134)
- *Musicians and Singers* (5133)

5241 Graphic Designers and Illustrating Artists

Graphic Designers and Illustrating Artists conceptualize and produce designs, illustrations, layouts and visual images to effectively communicate information for publications, advertising, films, posters and signs. They are employed by advertising and graphic design firms and by other establishments with advertising departments. Graphic Designers and Illustrating Artists who are also supervisors, project managers or consultants are included in this unit group.

Examples of titles classified in this unit group

Advertising Designer
Animator
Art Director
Commercial Artist
Graphic Artist
Graphic Designer
Illustrator
Layout Designer
Medical Illustrator
Page Designer
Scientific Illustrator
Title Artist

Main duties

Graphic Designers and Illustrating Artists perform some or all of the following duties:

- Consult with clients to establish the nature and content of designs and illustrations for reproduction
- Determine medium best suited to produce desired visual effect and method of reproduction
- Prepare sketches, photographs or illustrations of subjects to be rendered
- Estimate cost of materials and time to complete graphic design and illustration
- Prepare specifications for design
- Produce final designs or illustrations, or supervise the production of design by other graphic designers or graphic arts technicians.

Employment requirements

- Completion of secondary school is required.
- A university degree in visual arts with specialization in graphic arts, commercial art or photography
  or
  Completion of a college or other program in graphic arts or commercial art is usually required.
- Experience as a graphic arts technician may be required and may substitute for post-secondary training.
- Creative ability, as demonstrated by a portfolio of work, is required.

Additional information

- Progression to management positions, such as advertising manager, is possible with experience.

Classified elsewhere

- *Graphic Arts Technicians* (5223)
- *Interior Designers* (5242)
- *Painters, Sculptors and Other Visual Artists* (5136)
- Advertising managers (in 0611 *Sales, Marketing and Advertising Managers*)

5242 Interior Designers

Interior Designers conceptualize and produce aesthetic and functional designs for interior spaces in residential, commercial, institutional and industrial buildings. They are employed by architectural firms, interior design firms, retail establishments, construction companies and other establishments, or they may be self-employed.

Examples of titles classified in this unit group

Building Space Planner
Interior Design Technician
Interior Designer
Kitchen Designer
Office Space Planner
Project Manager, Interior Design
Retail Space Planner

Main duties

Interior Designers perform some or all of the following duties:

- Consult with clients to determine needs, preferences and purpose of space
- Develop detailed plans and models showing arrangement of walls, dividers, displays, lighting and other fixtures
- Develop decorating plans and advise on selection of colour schemes, floor and wall coverings, furniture and other items
- Estimate costs and materials required
- Prepare specifications for the final interior designs
- May direct site work crews.

Interior designers may specialize in designing interiors for residences, offices, hotels, restaurants or retail establishments.

Employment requirements

- A university degree or college diploma in interior design or architectural design is usually required.
- Candidates must possess creative ability, as demonstrated by a portfolio of work.
- Registration with the Interior Design Association in the province of employment may be required.

Additional information

- Specialization in a particular field of interior design is possible through specific university or college training, or through experience.

Classified elsewhere

- *Graphic Designers and Illustrating Artists* (5241)
- *Industrial Designers* (2252)
- *Theatre, Fashion, Exhibit and Other Creative Designers* (5243)
- Interior decorators (in 6421 *Retail Salespersons and Sales Clerks*)

5243 Theatre, Fashion, Exhibit and Other Creative Designers

Designers in this unit group conceptualize and produce designs for film, television, theatre and video productions, garments and textiles, displays and exhibits, and for other creative items such as jewellery, toys and trophies. Theatre designers are employed by performing arts and broadcasting companies; fashion designers are employed by clothing and textiles companies; and exhibit designers are employed by museums and retail establishments. Other creative designers in this unit group are employed by manufacturing establishments or may be self-employed.

Examples of titles classified in this unit group

Clothing Designer
Costume Designer
Couturier
Fabric Designer
Fashion Designer
Fur Designer
Jewellery Designer
Lighting Designer
Museum Exhibit Designer
Set Designer
Shoe Designer
Toy Designer
Trophy Designer
Window Display Designer

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Theatre designers design sets, costumes and lighting for theatre, film and video productions, operas and ballets.
- Fashion designers design and create clothing and accessories for men, women and children.
- Exhibit designers plan and develop exhibits and displays for museum exhibitions, trade shows, conventions, retail spaces and for other purposes.
- *Theatre designers may specialize in costume, lighting or set design; fashion designers may specialize in men's or women's apparel or in different lines such as sportswear, footwear or formal wear.*

Employment requirements

- A bachelor's degree in fine arts or visual arts with specialization in theatre design, clothing design or exhibit design
  or
  Completion of a college or art school program in theatre design, clothing design or exhibit design is required.
- Creative ability, as demonstrated by a portfolio of work, is required.

Classified elsewhere

- *Graphic Designers and Illustrating Artists* (5241)
- *Industrial Designers* (2252)
- *Interior Designers* (5242)
- *Patternmakers – Textile, Leather and Fur Products* (5245)
- Diorama maker – museums and galleries (in 5212 *Technical Occupations Related to Museums and Galleries*)

5244 Artisans and Craftspersons

This unit group includes those who use manual and artistic skills to design and make ornamental objects, pottery, stained glass, jewellery, rugs, blankets and other handicrafts. Makers of stringed musical instruments are also included in this unit group. Most craftspersons are self-employed. Craft instructors are also included in this unit group and are employed by artisan guilds, colleges, private studios and recreational organizations.

Examples of titles classified in this unit group

Artisan
Carver
Craft Instructor
Craftsperson
Glass Blower
Leather Worker
Metal Arts Worker
Potter
Silversmith
Stained Glass Artist
Stringed Instrument Maker
Totem Pole Carver
Weaver

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Carvers use hand tools and woodworking machines to produce carvings from wood, stone and other materials and to carve ornamental designs into wooden furniture and other objects.
- Glass blowers design and create glass objects using blowpipes and artisan's hand tools and equipment.
- Metal arts workers design jewellery, utensils, implements, wall hangings and other objects and crafts from gold, silver, copper, pewter and other metals.
- Potters design and create ornamental and functional earthenware pieces by shaping clay using moulds and a potter's wheel, glazing objects and baking pieces in a kiln.
- Stained glass artists cut, paint, fire and assemble pieces of stained glass to create designs for windows, lampshades and other objects.
- Stringed instrument makers construct stringed instruments using hand and power tools and applying knowledge of wood properties and instrument design.
- Weavers use hands or loom to interlace strips of flexible material such as wool, cotton, silk, grasses, bark and rawhide to make baskets, wreaths, wall hangings, clothing, rugs, blankets and other objects.
- Craft instructors prepare craftmaking lessons, gather the required working materials and demonstrate and teach craftmaking techniques.

Employment requirements

- Skills are often learned through apprenticeship with a master craftsperson.
- Training programs are offered by artisan guilds, colleges and private studios.

Classified elsewhere

- *Jewellers, Watch Repairers and Related Occupations* (7344)
- *Painters, Sculptors and Other Visual Artists* (5136)
- Fabric-making occupations in manufacturing (in 9442 *Weavers, Knitters and Other Fabric-making Occupations*)

5245 Patternmakers – Textile, Leather and Fur Products

Patternmakers in this unit group create master patterns for the production of garments, footwear and other textile, leather or fur products. They are employed by textile, leather or fur products manufacturers or they may be self-employed.

Examples of titles classified in this unit group

Dress Patternmaker
Embroidery Patternmaker
Fur Garments Patternmaker
Leather Products Patternmaker
Shoe Patternmaker
Textile Products Patternmaker

Main duties

Patternmakers in this unit group perform some or all of the following duties:

- Examine sketches, samples of articles and specifications of designs to determine number, size and shape of pattern parts and amount of cloth required to make product
- Draw, lay out and cut master pattern of product
- Outline parts of pattern on paper and mark pattern to indicate details such as placement of pockets and pleats on garments, decorative stitching on shoe parts or eyelets on canvas products
- Create pattern size variations from master pattern using computer or drafting instruments, or forward pattern to computer operator to create pattern size variations
- Lay out master pattern on fabric and cut sample pattern
- Mark size, identification, style and other information on sample patterns.

Employment requirements

- Completion of secondary school is required.
- College courses in design and patternmaking
  or
  One to two years of on-the-job training are required.
- Courses in computer-assisted patternmaking may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Supervisors, Fabric, Fur and Leather Products Manufacturing* (9225)

5251 Athletes

Athletes participate in competitive sports events on an amateur or professional basis. They play team sports such as hockey, baseball, football and lacrosse, or compete in individual sports such as skiing, figure skating, boxing or track and field. Athletes are employed by professional team organizations or they may be self-employed.

Examples of titles classified in this unit group

Athlete
Baseball Player
Boxer
Figure Skater
Football Player
Golfer
Harness Race Driver
Hockey Player
Jockey
Professional Athlete
Skier
Sprinter
Track Athlete

Main duties

Athletes perform some or all of the following duties:

- Train under the direction of a coach or trainer to develop level of ability necessary for competition
- Attend scheduled practice and training sessions
- Participate in league, provincial, national or international competitive athletic events
- Assess performance following athletic competition to identify weaknesses and strengths.

Employment requirements

- Demonstrated ability in a particular sport is required.
- Extensive training under the supervision of a coach is required.
- Certification with a particular sports federation may be required.

Classified elsewhere

- *Coaches* (5252)
- *Sports Officials and Referees* (5253)
- Sports instructors (in 5254 *Program Leaders and Instructors in Recreation and Sport*)

5252 Coaches

Coaches prepare and train individual athletes or teams for competitive events. They are employed by national and provincial sports organizations, professional and amateur sports teams, sports clubs and universities or they may be self-employed. This unit group also includes sports scouts who identify and recruit athletes for professional sports teams. They are employed by professional sports organizations.

Examples of titles classified in this unit group

Athletics Coach
Coach
Figure Skating Coach
Football Coach
Football Scout
Gymnastics Coach
Hockey Coach
Hockey Scout
Head Coach
National Team Coach
Sports Scout
Swimming Coach
Volleyball Coach

Main duties

Coaches perform some or all of the following duties:

- Identify strengths and weaknesses of athletes or teams
- Plan, develop and implement training and practice sessions
- Nurture and develop athletes' potential skills and abilities
- Develop, plan and co-ordinate competitive schedules and programs
- Motivate and prepare athletes or teams for competitive events or games
- Formulate competitive strategy, develop game plans and direct athletes and players during games or athletic events
- Analyse and evaluate athletes' or team's performance.

Sports scouts perform some or all of the following duties:

- Identify and recruit developing athletes for professional sports team
- Observe and evaluate prospective athletes' skills and performance, and review their past record
- File report on scouting assessments and recommendations with professional team employers.

Employment requirements

Coaches

- Completion of the National Coaching Certificate program is usually required for individual and team sport coaches in all sports.
- National Coaching Certificate Level 3 is usually required for provincial coaches.
- National Coaching Certificate Level 4 is required for coaches of national team athletes.
- Experience in and technical knowledge of the sport is required.

Sports scouts

- Experience in and technical knowledge of the sport is required.

Classified elsewhere

- *Athletes (5251)*
- *Program Leaders and Instructors in Recreation and Sport (5254)*
- *Sports Officials and Referees (5253)*
- Athletic trainers (in 3144 *Other Professional Occupations in Therapy and Assessment*)

5253 Sports Officials and Referees

Sports Officials and Referees observe and enforce rules and regulations governing sporting events, athletic games and sports competitions. They are employed by national, provincial and local sporting commissions, organizations and leagues.

Examples of titles classified in this unit group

Athletic Judge
Clerk-of-the-Course
Figure Skating Judge
Goal Judge
Harness Racing Starter
Linesman/woman – Sports
Paddock Judge
Racetrack Timer
Referee
Sports Official
Umpire

Main duties

Sports Officials and Referees perform some or all of the following duties:

- Officiate at sporting events or athletic competitions to maintain standards of play and to ensure that game rules are observed
- Record lapsed time during event or competition
- Judge the performance of competitors, award points, impose penalties for infractions and determine results
- Compile scores and other athletic records
- Verify credentials of athletes or animals engaged in sports or related special events.

Employment requirements

- Sports officials require certification by and registration with a sport governing agency or commission.
- Sports referees require completion of an officiating program offered by a sport governing agency.

Classified elsewhere

- *Coaches* (5252)
- *Program Leaders and Instructors in Recreation and Sport* (5254)

5254 Program Leaders and Instructors in Recreation and Sport

Program Leaders and Instructors in Recreation and Sport lead and instruct groups and individuals in recreational, sports, fitness or athletic programs. They are employed by community centres, sports and fitness clubs and similar establishments.

Examples of titles classified in this unit group

Aerobics Instructor
Animator, Recreation and Sport
Arts and Crafts Leader
Camp Counsellor
Fitness Instructor
Fitness Leader
Golf Professional
Lifeguard
Playground Worker
Recreation Program Leader
Riding Instructor
Ski Instructor
Ski Patroller
Swimming Instructor

Main duties

Program Leaders and Instructors in Recreation and Sport perform some or all of the following duties:

- Plan and co-ordinate recreational, athletic, fitness or sports activities
- Assemble supplies and sports and game equipment
- Demonstrate and instruct athletic, fitness or sports activities and techniques
- Instruct groups and individuals in arts, crafts and similar activities and lead groups and individuals in recreational or leisure programs
- Provide lifestyle awareness information
- Conduct therapeutic recreational or athletic activities
- Monitor recreational or sports activities to ensure safety and provide emergency or first aid assistance when required.

Employment requirements

- Completion of secondary school education is usually required.
- Completion of a college program in recreation or physical education or extensive experience in a specific recreational or sports program activity is usually required.
- Certification is usually required in a specific area of recreational or athletic activity, such as a swimming instructor's certificate or a ski instructor's certificate.
- Demonstrated ability in a particular recreational or sports discipline is required.

Classified elsewhere

- *Recreation and Sports Program and Service Directors* (0513)
- Recreation and sports program supervisors (in 4167 *Recreation and Sports Program Supervisors and Consultants*

Major Group 62
SKILLED SALES AND SERVICE OCCUPATIONS

621 Sales and Service Supervisors

6211 Retail Trade Supervisors
6212 Food Service Supervisors
6213 Executive Housekeepers
6214 Dry Cleaning and Laundry Supervisors
6215 Cleaning Supervisors
6216 Other Service Supervisors

622 Technical Sales Specialists, Wholesale Trade

6221 Technical Sales Specialists, Wholesale Trade

623 Insurance and Real Estate Sales Occupations and Buyers

6231 Insurance Agents and Brokers
6232 Real Estate Agents and Salespersons
6233 Retail and Wholesale Buyers
6234 Grain Elevator Operators

624 Chefs and Cooks

6241 Chefs
6242 Cooks

625 Butchers and Bakers

6251 Butchers and Meat Cutters, Retail and Wholesale
6252 Bakers

626 Police Officers and Firefighters

6261 Police Officers (Except Commissioned)
6262 Firefighters

627 Technical Occupations in Personal Service

6271 Hairstylists and Barbers
6272 Funeral Directors and Embalmers

Major Group 64
INTERMEDIATE SALES AND SERVICE OCCUPATIONS

641 Sales Representatives, Wholesale Trade

6411 Sales Representatives, Wholesale Trade (Non-Technical)

642 Retail Salespersons and Sales Clerks

6421 Retail Salespersons and Sales Clerks

643 Occupations in Travel and Accommodation

6431 Travel Counsellors
6432 Pursers and Flight Attendants
6433 Airline Sales and Service Agents
6434 Ticket and Cargo Agents and Related Clerks (Except Airline)
6435 Hotel Front Desk Clerks

644 Tour and Recreational Guides and Amusement Occupations[9]

6441 Tour and Travel Guides
6442 Outdoor Sport and Recreational Guides
6443 Amusement Attraction Operators and Other Amusement Occupations

645 Occupations in Food and Beverage Service

6451 Maîtres d'hôtel and Hosts/Hostesses
6452 Bartenders
6453 Food and Beverage Servers

646 Other Occupations in Protective Service

6461 Sheriffs and Bailiffs
6462 Correctional Service Officers
6463 By-law Enforcement and Other Regulatory Officers, n.e.c.
6464 Occupations Unique to the Armed Forces[10]
6465 Other Protective Service Occupations

647 Childcare and Home Support Workers[11]

6470 Early Childhood Educators and Assistants
6471 Visiting Homemakers, Housekeepers and Related Occupations
6472 Elementary and Secondary School Teacher Assistants
6473 Early Childhood Educator Assistants
6474 Babysitters, Nannies and Parents' Helpers

648 Other Occupations in Personal Service

6481 Image, Social and Other Personal Consultants
6482 Estheticians, Electrologists and Related Occupations
6483 Pet Groomers and Animal Care Workers
6484 Other Personal Service Occupations

[9] In data provided by Statistics Canada, unit groups 6443 and 6671 are combined to form *6670 Attendants in Amusement, Recreation and Sport*. Hence, Statistics Canada data for major group 64 and for minor group 644 does not include unit group 6443.
[10] This unit group only includes occupations unique to the armed forces. However, Statistics Canada data for this unit group includes all non-commissioned armed forces personnel. (See introduction.)
[11] In data provided by Statistics Canada, unit groups 4214 and 6473 are combined to form *6470 Early Childhood Educators and Assistants*. Hence, data for major group 64 and for minor group 647 includes unit group 4214.

Major Group 66
ELEMENTAL SALES AND SERVICE OCCUPATIONS

661 Cashiers

6611 Cashiers

662 Other Sales and Related Occupations

6621 Service Station Attendants
6622 Grocery Clerks and Shelf Stockers
6623 Other Elemental Sales Occupations

663 Elemental Medical and Hospital Assistants

6631 Elemental Medical and Hospital Assistants

664 Food Counter Attendants and Kitchen Helpers

6641 Food Service Counter Attendants and Food Preparers
6642 Kitchen and Food Service Helpers

665 Security Guards and Related Occupations

6651 Security Guards and Related Occupations

666 Cleaners

6661 Light Duty Cleaners
6662 Specialized Cleaners
6663 Janitors, Caretakers and Building Superintendents

667 Other Attendants in Travel, Accommodation and Recreation[12]

6670 Attendants in Amusement, Recreation and Sport
6671 Attendants in Recreation and Sport
6672 Other Attendants in Accommodation and Travel (Except Airline Travel)

668 Other Elemental Service Occupations

6681 Dry Cleaning and Laundry Occupations
6682 Ironing, Pressing and Finishing Occupations
6683 Other Elemental Service Occupations

[12] In data provided by Statistics Canada, unit groups 6443 and 6671 are combined to form *6670 Attendants in Amusement, Recreation and Sport*. Hence, data for major group 66 and for minor group 667 includes unit group 6443.

6211 Retail Trade Supervisors

Retail Trade Supervisors supervise and co-ordinate the activities of workers in the following unit groups: *Retail Salespersons and Sales Clerks* (6421), *Cashiers* (6611), *Grocery Clerks and Shelf Stockers* (6622) and *Other Elemental Sales Occupations* (6623). Retail Trade Supervisors are employed in retail establishments and businesses involved in telephone or door-to-door soliciting.

Examples of titles classified in this unit group

Department Store Supervisor
Head Cashier
Liquor Store Supervisor
Newspaper Delivery Supervisor
Produce Department Supervisor
Rental Service Supervisor
Route Supervisor, Retail Sales
Telemarketing Supervisor

Main duties

Retail Trade Supervisors perform some or all of the following duties:

- Supervise and co-ordinate sales staff and cashiers
- Assign sales workers to duties and prepare work schedules
- Authorize payments by cheque and the return of merchandise
- Sell merchandise to customers
- Resolve problems that arise, such as customer complaints and supply shortages
- Maintain specified inventory and order merchandise
- Prepare reports regarding sales volumes, merchandising and personnel matters
- Hire and train or arrange for the training of new sales staff.

Employment requirements

- Completion of secondary school may be required.
- Previous retail sales experience such as retail salesperson or sales clerk, cashier, telephone solicitor, door-to-door salesperson or rental agent is required.

Additional information

- Progression to management positions such as those in *Retail Trade Managers* (0621) is possible with additional training or experience.

Classified elsewhere

- *Food Service Supervisors* (6212)
- *Retail Trade Managers* (0621)

6212 Food Service Supervisors

Food Service Supervisors supervise, direct and co-ordinate the activities of workers who prepare, portion and serve food. They are employed by hospitals and other health care establishments and by cafeterias, catering companies and other food service establishments.

Examples of titles classified in this unit group

Cafeteria Supervisor, Food Services
Catering Supervisor
Canteen Supervisor
Food Service Supervisor

Main duties

Food Service Supervisors perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of staff who prepare and portion food
- Estimate and order ingredients and supplies required for meal preparation
- Prepare food order summaries for chef according to requests from dieticians, patients in hospitals or other customers
- Establish methods to meet work schedules
- Maintain records of stock, repairs, sales and wastage
- Train staff in job duties, and sanitation and safety procedures
- Supervise and check assembly of regular and special diet trays and delivery of food trolleys to hospital patients
- Ensure that food and service meet quality control standards.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a community college program in food service administration, hotel and restaurant management or related discipline
  or
  Several years of experience in food preparation or service are required.

Classified elsewhere

- *Maîtres d'Hôtel and Hosts/Hostesses* (6451)
- *Restaurant and Food Service Managers* (0631)
- Banquet Captains (in 6453 *Food and Beverage Servers*)

6213 Executive Housekeepers

Executive Housekeepers direct and control the operations of housekeeping departments within hotels, hospitals and other establishments.

Examples of titles classified in this unit group

Assistant Executive Housekeeper
Executive Housekeeper
Hospital Executive Housekeeper
Hotel Executive Housekeeper
Housekeeping Director
Housekeeping Manager

Main duties

Executive Housekeepers perform some or all of the following duties:

- Establish and implement operational procedures for the housekeeping department
- Plan and co-ordinate the activities of housekeeping supervisors and their crews
- Co-ordinate the inspection of assigned areas to ensure that safety standards and departmental policies are being met
- Select and purchase equipment and supplies
- Hire and supervise housekeeping staff
- Maintain financial records and prepare budgets, payroll and employee schedules.

Employment requirements

- Completion of secondary school is usually required.
- A university degree or college diploma in hospital management, hotel management or business administration is usually required.
- Extensive experience as a cleaning supervisor may substitute for formal education requirements.

Classified elsewhere

- *Accommodation Service Managers* (0632)
- *Maintenance Managers* (0722)
- Housekeeping supervisors (in 6215 *Cleaning Supervisors*)

6214 Dry Cleaning and Laundry Supervisors

Dry Cleaning and Laundry Supervisors supervise and co-ordinate the activities of workers in the following unit groups: *Dry Cleaning and Laundry Occupations* (6681) and *Ironing, Pressing and Finishing Occupations* (6682). Dry Cleaning and Laundry Supervisors are employed by dry cleaning and laundry establishments and by laundries in hotels, hospitals and other institutions.

Examples of titles classified in this unit group

Dry Cleaning Supervisor
Foreman/woman – Laundry and Dry Cleaning
Laundry Supervisor
Production Supervisor, Dry Cleaning

Main duties

Dry Cleaning and Laundry Supervisors perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of dry cleaning and laundry staff
- Establish and implement production routines and co-ordinate work activities with other departments
- Monitor quality and production levels
- Requisition supplies
- Hire and train or arrange for training of workers
- Oversee the cleaning of suedes, leathers and other difficult items.

Employment requirements

- Completion of secondary school is usually required.
- Experience as a dry cleaning or laundry machine operator is required.

Additional information

- Progression to managerial positions, such as dry cleaning manager, is possible with additional training or experience.

Classified elsewhere

- *Dry Cleaning and Laundry Occupations* (6681)
- Dry cleaning services managers (in 0651 *Other Services Managers*)

6215 Cleaning Supervisors

Cleaning Supervisors supervise and co-ordinate the activities of workers in the following unit groups: *Light Duty Cleaners* (6661), *Specialized Cleaners* (6662) and *Janitors, Caretakers and Building Superintendents* (6663). Cleaning Supervisors are employed by hospitals, office buildings, hotels, motels, schools, commercial establishments and cleaning companies.

Examples of titles classified in this unit group

Building Cleaning Supervisor
Carpet Cleaning Supervisor
Cleaning Supervisor
Head Caretaker
Head Custodian
Head Janitor
Window Washing Supervisor

Main duties

Cleaning Supervisors perform some or all of the following duties:

- Supervise and co-ordinate the work of light duty, industrial or specialized cleaners and janitors
- Inspect sites or facilities to ensure established safety and cleanliness standards are met
- Recommend or arrange for additional services required such as painting, repair work, renovations or replacement of furnishings and equipment
- Hire and train cleaning staff
- Prepare work schedule and co-ordinate activities with those of other departments
- Prepare budget, estimate costs and keep financial records
- Receive payment for specialized cleaning jobs
- Assist cleaners in performing certain duties.

Employment requirements

- Completion of secondary school is usually required.
- Previous experience as a light duty cleaner, specialized cleaner, janitor or industrial cleaner is required.

Classified elsewhere

- *Executive Housekeepers* (6213)
- *Specialized Cleaners* (6662)
- Building maintenance supervisors (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

6216 Other Service Supervisors

Supervisors in this unit group supervise and co-ordinate the activities of hotel accommodation service clerks, theatre ushers and attendants, reservation clerks, sport and recreation club workers, commissionaires and other service workers not elsewhere classified. They are employed by service establishments throughout the public and private sectors.

Examples of titles classified in this unit group

Camp Ground Supervisor
Hotel Clerk Supervisor
Parking Lot Supervisor
Reservations Supervisor
Supervisor, Club House Attendants
Supervisor, Commissionaires
Supervisor, Security Guards
Supervisor, Theatre Attendants
Supervisor, Ticket Takers
Tour Guide Supervisor
Travel Clerk Supervisor

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Co-ordinate, assign and review the work of hotel, motel and other accommodation services clerks, theatre ushers and attendants, reservation clerks, sport and recreation club workers, commissionaires, and other service workers not elsewhere classified
- Establish work schedules and procedures and co-ordinate activities with other work units or departments
- Resolve work-related problems and prepare and submit progress and other reports
- Train workers in job duties, safety procedures and company policies
- Requisition supplies and materials
- Ensure smooth operation of computer systems, equipment and machinery, and arrange for maintenance and repair work
- May perform the same duties as workers supervised.

Employment requirements

- Completion of secondary school is usually required.
- Completion of college courses related to area supervised may be required.
- Experience in the occupation supervised is usually required.

Classified elsewhere

- *Accommodation Service Managers* (0632)
- *Cleaning Supervisors* (6215)
- *Dry Cleaning and Laundry Supervisors* (6214)
- *Executive Housekeepers* (6213)
- *Food Service Supervisors* (6212)
- *Other Services Managers* (0651)
- *Retail Trade Supervisors* (6211)

6221 Technical Sales Specialists, Wholesale Trade

Technical Sales Specialists, Wholesale Trade sell a range of technical goods and services, such as scientific and industrial products, electricity, telecommunications services and computer services, to governments and to commercial and industrial establishments. They are employed by establishments that produce or provide technical goods and services, such as pharmaceutical companies, industrial equipment manufacturing companies, computer services firms, engineering firms and hydroelectric companies. Technical sales specialists who are supervisors are included in this unit group.

Examples of titles classified in this unit group

Aircraft Sales Representative
Communication Equipment Sales Representative
Construction Equipment Sales Representative
Electricity Sales Representative
Heavy Equipment Sales Representative
Industrial Supplies Sales Representative
Medical Instrumentation Sales Engineer
Sales Representative, Technical Sales
Software Sales Representative
Technical Sales Supervisor

Main duties

Technical Sales Specialists perform some or all of the following duties:

- Promote sales to existing clients
- Identify and solicit potential clients
- Assess client's needs and resources and recommend the appropriate goods or services
- Provide input into product design where goods or services must be tailored to suit client's needs
- Develop reports and proposals as part of sales presentation to illustrate benefits from use of good or service
- Estimate costs of installing and maintaining equipment or service
- Prepare and administer sales contracts
- Consult with clients after sale to resolve problems and to provide ongoing support
- May supervise the activities of other technical sales specialists.

Technical sales specialists usually specialize in a particular line of goods or services.

Employment requirements

- Completion of secondary school is required.
- A university degree or college diploma in a program related to the product or service is usually required.
- Experience in sales or in a technical occupation related to the product or service may be required.
- Technical sales supervisors require experience as a technical sales specialist.

Additional information

- Progression to sales management positions is possible with additional training or experience.

Classified elsewhere

- *Retail Salespersons and Sales Clerks* (6421)
- *Sales, Marketing and Advertising Managers* (0611)
- *Sales Representatives, Wholesale Trade (Non-Technical)* (6411)

6231 Insurance Agents and Brokers

Insurance Agents and Brokers sell automobile, fire, life, property, marine and other types of insurance to businesses and individuals. Insurance agents are employed by individual insurance companies to sell that company's products to clients. Insurance brokers are employed by brokerage firms and seek appropriate insurance products through several insurance companies on behalf of clients.

Examples of titles classified in this unit group

Insurance Agent
Insurance Broker
Insurance Sales Representative

Main duties

Insurance Agents and Brokers perform some or all of the following duties:

- Sell automobile, fire, health, life, property, marine, aircraft and other types of insurance to clients
- Establish client insurance coverage, calculate premiums and establish method of payment
- Provide information concerning group and individual insurance packages, the range of risk coverage, benefits paid and other policy features
- Ensure appropriate forms, medical examinations and other policy requirements are completed
- Respond to clients' enquiries when claims are made.

Employment requirements

- Completion of secondary school is required.
- On-the-job training and completion of insurance industry-sponsored courses and training programs are required.
- Licensure by the Superintendent of Insurance in the province or territory of employment is required.

Additional information

- Progression to insurance management positions is possible through experience.
- Completion of educational programs through the Insurance Institute of Canada or its provincial counterpart entitles agents to professional recognition as an Associate of The Insurance Institute of Canada (A.I.I.C.) or Fellow of The Insurance Institute of Canada (F.I.I.C.).

Classified elsewhere

- *Insurance Underwriters* (1234)
- Insurance managers (in 0121 *Insurance, Real Estate and Financial Brokerage Managers*)

6232 Real Estate Agents and Salespersons

Real Estate Agents and Salespersons act as agents for the sale or purchase of houses, apartments, commercial buildings, land and other real estate and are employed in the real estate industry.

Examples of titles classified in this unit group

Commercial Real Estate Agent
Estate Agent
Real Estate Agent
Real Estate Broker
Real Estate Sales Representative
Residential Real Estate Agent
Supervisor, Real Estate Agents

Main duties

Real Estate Agents and Salespersons perform some or all of the following duties:

- Solicit property sales listings from prospective vendors
- Assist vendors in selling property by establishing asking price, advertising the property, listing the property with multiple listing services and conducting open houses for prospective buyers
- Assist prospective buyers in selecting, visiting, inspecting and making offers of purchase on real estate properties
- Advise clients on market conditions, prices, mortgages, legal requirements and related matters
- Draw up sales agreements for approval of purchaser and seller
- May rent or lease properties on behalf of clients.

Employment requirements

- Completion of secondary school is required.
- Completion of a real estate training course is required.
- Provincial licensure in the province of employment is required.

Additional information

- Real estate agents and salespersons normally work on a commission basis.
- Real estate agents may operate independently by obtaining a broker's licence in accordance with the regulations of the province of employment. A broker's licence is required to become a manager in real estate.

Classified elsewhere

- *Assessors, Valuators and Appraisers* (1235)
- *Insurance, Real Estate and Financial Brokerage Managers* (0121)
- Mortgage brokers (in 1114 *Other Financial Officers*)
- Rental agents (in 1224 *Property Administrators*)
- Right-of-way agents (in 1225 *Purchasing Agents and Officers*)

6233 Retail and Wholesale Buyers

Retail and Wholesale Buyers buy merchandise for resale by retail and wholesale establishments and are usually responsible for the merchandising operations of retail establishments. Retail and wholesale buyers who are supervisors and those who are assistants are included in this unit group.

Examples of titles classified in this unit group

Appliance Buyer
Assistant Buyer
Buyer – Retail and Wholesale
Chief Buyer
Clothing Buyer
Food Buyer
Merchandiser
Senior Buyer
Taster and Buyer, Beverages
Produce Buyer

Main duties

Retail and Wholesale Buyers perform some or all of the following duties:

- Purchase merchandise for resale by retail or wholesale establishments
- Review requirements of establishment and determine quantity and type of merchandise to purchase
- Study market reports, trade periodicals and sales promotion materials and visit trade shows, showrooms, factories and product design events
- Select the merchandise which best fits the establishment's requirements
- Interview suppliers and negotiate prices, discounts, credit terms and transportation arrangements
- Oversee distribution of merchandise to outlets and maintain adequate stock levels
- Establish and maintain contact with suppliers
- Supervise the work of other retail buyers.

Retail and wholesale buyers may specialize in a particular merchandise line.

Employment requirements

- Completion of secondary school is usually required.
- A university degree or college diploma in business, marketing or a related program is usually required.
- Experience as a sales supervisor or sales representative is required.
- Supervisors and senior buyers require experience.

Additional information

- Retail and wholesale buyers may specialize through experience or product-related training courses.
- Progression to *Retail Trade Managers* (0621) or *Sales, Marketing and Advertising Managers* (0611) is possible with additional training or experience.

Classified elsewhere

- *Purchasing Agents and Officers* (1225)

6234 Grain Elevator Operators

Grain Elevator Operators purchase grain from farmers, determine the grade, quality and weight of grain delivered, and maintain records for farmers and companies. They are employed by licensed grain elevator companies.

Examples of titles classified in this unit group

Assistant Grain Elevator Manager
District Grain Elevator Manager
Grain Elevator Operator
Primary Grain Elevator Operator

Main duties

Grain Elevator Operators perform some or all of the following duties:

- Calculate grain quota from information supplied by farmers and the Canadian Wheat Board
- Record quota and subsequent deliveries of grain from individual farmers
- Examine grain samples and conduct tests to determine grade and quality of grain
- Purchase grain and arrange for transport or storage of grain
- Weigh and record type of grain received or in storage and report data to grain company and Canadian Wheat Board
- Supervise activities of workers who operate equipment to clean and move grain in elevator and who load trucks and rail cars, or operate equipment themselves to perform these activities
- Act as a farm supply sales agent for fertilizers, insecticides, and other farm supplies.

Employment requirements

- Completion of secondary school is required.
- Several years of experience working in a grain elevator are required.
- A pesticide dispenser's licence is required in Alberta and British Columbia, and may be required in other provinces.
- On-the-job training is provided.

Additional information

- Progression from grain elevator manager to district manager is possible with experience.

Classified elsewhere

- Managers of grain elevator terminals (in 0721 *Facility Operation Managers*)

6241 Chefs

This unit group includes various types of chefs who plan and direct food preparation and cooking activities and who prepare and cook meals and specialty foods. They are employed in restaurants, hotels, hospitals and other health care institutions, central food commissaries, clubs and similar establishments, and on ships.

Examples of titles classified in this unit group

Chef
Chef de cuisine
Chef de partie
Corporate Chef
Executive Chef
Executive Sous-Chef
Garde Manger, Chef
Head Chef
Master Chef
Pastry Chef
Saucier
Sous-chef
Specialist Chef

Main duties

Executive chefs perform some or all of the following duties:

- Plan and direct food preparation and cooking activities of several restaurants in an establishment, restaurant chains, hospitals, or other establishments with food services
- Plan menus and ensure food meets quality standards
- Estimate food requirements and may estimate food and labour costs
- Supervise activities of sous-chefs, specialist chefs, chefs and cooks
- Recruit and hire staff
- May prepare and cook food on a regular basis, or for special guests or functions.

Sous-chefs perform some or all of the following duties:

- Supervise activities of specialist chefs, chefs, cooks and other kitchen workers
- Demonstrate new cooking techniques and new equipment to cooking staff
- May plan menus and requisition food and kitchen supplies
- May prepare and cook meals or specialty foods.

Chefs and specialist chefs perform some or all of the following duties:

- Prepare and cook complete meals, banquets or specialty foods, such as pastries, sauces, soups, salads, vegetables and meat, poultry and fish dishes, and create decorative food displays
- Instruct cooks in preparation, cooking, garnishing and presentation of food
- Supervise cooks and other kitchen staff
- May plan menus
- May requisition food and kitchen supplies.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a three-year cook's apprenticeship program
  or
  Formal training abroad
  or
  Equivalent training and experience are required.
- Cook's trade certification is available in all provinces except Quebec, the Northwest Territories and the Yukon.
- Executive chefs usually require several years of experience in commercial food preparation, including two years in a supervisory capacity
  and
  Experience as a sous-chef, specialist chef or chef.
- Sous-chefs, specialist chefs and chefs usually require several years of experience in commercial food preparation.

Additional information

- There is some mobility among the various types of chefs in this unit group.
- Executive chefs may progress to managerial positions in food preparation establishments.

Classified elsewhere

- *Cooks* (6242)
- *Food Service Counter Attendants and Food Preparers* (6641)

6242 Cooks

Cooks prepare and cook a wide variety of foods. They are employed in restaurants, hotels, hospitals and other health care institutions, central food commissaries, educational institutions and other establishments. Cooks are also employed aboard ships and at construction and logging camp sites. Apprentice cooks are included in this unit group.

Examples of titles classified in this unit group

Apprentice Cook
Cook
Dietary Cook
First Cook
Grill Cook
Hospital Cook
Institutional Cook
Journeyman/woman Cook
Licensed Cook
Second Cook
Short Order Cook

Main duties

Cooks perform some or all of the following duties:

- Prepare and cook complete meals or individual dishes and foods
- Prepare and cook special meals for patients as instructed by dietitian or chef
- Supervise kitchen helpers
- Oversee subordinate personnel in preparation, cooking and handling of food
- May plan menus, determine size of food portions, estimate food requirements and costs, and monitor and order supplies.

Cooks may specialize in preparing and cooking ethnic cuisine or special dishes.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a three-year apprenticeship program for cooks
  or
  Completion of college or other program in cooking
  or
  Several years of commercial cooking experience are required.
- Trade certification is available in all provinces except Quebec and the Yukon and Northwest Territories.
- Interprovincial trade certification (Red Seal) is also available to qualified cooks.

Additional information

- There is mobility among the various types of cooks in this group.
- Progression to supervisory or more senior positions, such as chef, is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Chefs* (6241)
- *Food Service Counter Attendants and Food Preparers* (6641)

6251 Butchers and Meat Cutters, Retail and Wholesale

Butchers and Meat Cutters, Retail and Wholesale prepare standard cuts of meat, poultry, fish and shellfish for sale in retail or wholesale food establishments. They are employed in supermarkets, grocery stores, butcher shops, fish stores or may be self-employed. Butchers who are supervisors or heads of departments are included in this group.

Examples of titles classified in this unit group

Butcher, Retail and Wholesale
Butcher Apprentice
Head Butcher, Retail and Wholesale
Meat Cutter, Retail and Wholesale
Supermarket Meat Cutter

Main duties

Butchers and meat cutters in this unit group perform some or all of the following duties:

- Cut, trim and otherwise prepare standard cuts of meat, poultry, fish and shellfish for sale at self-serve counters or according to customers' orders
- Grind meats and slice cooked meats using powered grinders and slicing machines
- Prepare special displays of meat, poultry, fish and shellfish
- Shape, lace and tie roasts and other meats, poultry or fish and may wrap prepared meats, poultry, fish and shellfish
- May supervise other butchers or meat cutters.

Employment requirements

- Completion of secondary school may be required.
- Completion of a college or other program in meat cutting may be required.
- On-the-job training in food stores is usually provided for retail butchers and meat cutters.
- Trade certification is available, but voluntary, in British Columbia.

Classified elsewhere

- *Industrial Butchers and Meat Cutters, Poultry Preparers and Related Workers* (9462)

6252 Bakers

Bakers prepare bread, rolls, muffins, pies and cakes for sale in retail food establishments or for serving in restaurants and other establishments. They are employed in bakeries, supermarkets, hotels and restaurants or they may be self-employed. Bakers who are supervisors are included in this unit group.

Examples of titles classified in this unit group

Baker
Baker Apprentice
Bakery Supervisor
Head Baker

Main duties

Bakers perform some or all of the following duties:

- Prepare dough for pies, bread and rolls and sweet goods, and prepare batters for muffins, cookies, cakes, icings and frostings according to recipes or special customer orders
- Bake mixed doughs and batters
- Frost and decorate cakes or other baked goods
- Draw up production schedule to determine type and quantity of goods to produce
- Purchase baking supplies
- Hire and train baking personnel
- May oversee sales and merchandising of baked goods.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a three or four-year apprenticeship program for bakers
  or
  Completion of a college or other program for bakers is usually required.
- On-the-job training may be provided.
- Trade certification is available, but voluntary, in Prince Edward Island, Ontario, Alberta, the Northwest Territories, British Columbia and the Yukon Territory.
- Interprovincial trade certification (Red Seal) is also available to qualified bakers.

Additional information

- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- Baking machine operators (in 9461 *Process Control and Machine Operators, Food and Beverage Processing*)
- Pastry chefs (in 6241 *Chefs*)

6261 Police Officers (Except Commissioned)

Police Officers protect the public, detect and prevent crime and perform other activities directed at maintaining law and order. They are employed by municipal and federal governments, some provincial governments and the Armed Forces. This unit group includes Military Police, Ports Canada Police and Railway Police.

Examples of titles classified in this unit group

Community Relations Officer
Constable
Crime Prevention Constable
Detective
Harbour Police Officer
Highway Patrol Officer
Military Police Officer
Police Cadet
Police Diver
Police Officer
Police Sergeant
Railway Police Officer
RCMP Officer

Main duties

Police Officers perform some or all of the following duties:

- Patrol assigned areas to maintain public safety and order and to enforce laws and regulations
- Investigate crimes and accidents, secure evidence, interview witnesses, compile notes and reports and provide testimony in courts of law
- Arrest criminal suspects
- Provide emergency assistance to victims of accidents, crimes and natural disasters
- Participate in crime prevention, public information and safety programs
- May supervise and co-ordinate the work of other police officers.

Employment requirements

- Completion of secondary school is required.
- Completion of a college program or university degree in law and security or in the social sciences may be required.
- A three to six-month police training program is provided.
- Physical agility, strength, fitness and vision requirements must be met.
- Experience as a constable is required for detectives and sergeants.

Additional information

- Progression to commissioned police officer positions is possible with additional training and experience.

Classified elsewhere

- *By-law Enforcement and Other Regulatory Officers, n.e.c.* (6463)
- *Commissioned Police Officers* (0641)
- *Sheriffs and Bailiffs* (6461)
- Private detectives (in 6465 *Other Protective Service Occupations*)

6262 Firefighters

Firefighters carry out firefighting and fire prevention activities, and assist in other emergencies. They are employed by municipal, provincial and federal governments and by large industrial establishments that have internal firefighting services.

Examples of titles classified in this unit group

Airport Firefighter
Fire Captain
Firefighter
Firefighter, Shipboard
Industrial Firefighter
Lieutenant, Firefighter

Main duties

Firefighters perform some or all of the following duties:

- Respond to fire alarms and other calls for assistance, such as automobile and industrial accidents
- Rescue victims from burning buildings and accident sites
- Control and extinguish fires using manual and power equipment, such as axes, water hoses, aerial ladders and hydraulic equipment
- Administer first-aid and other assistance
- Ensure proper operation and maintenance of firefighting equipment
- Inform and educate the public on fire prevention
- Train to maintain high level of physical fitness
- May supervise and co-ordinate the work of other firefighters.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a college program in fire protection technology or a related field may be required.
- A municipal firefighters training course is provided.
- Experience as a volunteer firefighter may be required.
- Physical agility, strength, fitness and vision requirements must be met.
- Several years of experience are required for senior firefighters, such as lieutenants and captains.

Additional information

- Progression to senior positions such as fire chief is possible with additional training and several years of experience.

Classified elsewhere

- *Fire Chiefs and Senior Firefighting Officers* (0642)
- Forest firefighters (in 8422 *Silviculture and Forestry Workers*)

6271 Hairstylists and Barbers

Hairstylists and Barbers cut and style hair and perform related services. They are employed in hairstyling or hairdressing salons, barber shops, vocational schools, hair replacement clinics and studios, health care establishments and theatre, film and television establishments.

Examples of titles classified in this unit group

Barber
Barber Apprentice
Hair Colour Technician
Hairdresser
Hairdresser Apprentice
Hairstylist
Hairstylist Apprentice
Wig Stylist

Main duties

Hairstylists perform some or all of the following duties:

- Suggest hair style compatible with client's physical features or determine style from client's instructions and preferences
- Shampoo and rinse hair
- Cut, trim, taper, curl, wave, perm and style hair
- Apply bleach, tint, dye or rinses to color, frost or streak hair
- Analyze hair and scalp condition and provide basic treatment or advice on beauty care treatments for scalp and hair
- May train or supervise other hairstylists, hairdressers and assistants.

Barbers perform some or all of the following duties:

- Cut and trim hair according to client's instructions or preferences
- Shave and trim beards and moustaches
- May shampoo hair and provide other hair treatment, such as waving, straightening and tinting and may also provide scalp conditioning massages.

Employment requirements

Hairstylists

- Some secondary school education is required.
- Completion of a two to three-year hairstyling apprenticeship program or completion of a college or other program in hairstyling combined with on-the-job training is usually required.
- Several years of experience may substitute for formal education and training.
- There are various provincial certification and licensing requirements for hairstylists, ranging from trade certification to licensing by a provincial association.

Barbers

- Some secondary school education is required.
- Completion of a two-year apprenticeship or other barber program is usually required.
- On-the-job training may substitute for formal education.
- There are various provincial certification and licensing requirements for barbers, ranging from trade certification to licensing by a provincial association.

Classified elsewhere

- *Estheticians, Electrologists and Related Occupations* (6482)
- Hairdressing teachers (in 4131 *College and Other Vocational Instructors*)

6272 Funeral Directors and Embalmers

Funeral directors co-ordinate and arrange all aspects of funeral services. Embalmers prepare human remains for funerals and burial. Funeral Directors and Embalmers are employed by funeral homes.

Examples of titles classified in this unit group

Apprentice Embalmer
Assistant Funeral Director
Embalmer
Funeral Director

Main duties

Funeral directors perform some or all of the following duties:

- Consult with the family of the deceased regarding the nature of the funeral service, the disposition of the remains and funeral costs
- Inform survivors of benefits for which they may be eligible
- Contact family and friends and issue death notices to newspapers
- Oversee the preparation of the remains, plan and schedule funeral services, co-ordinate burials and cremations and complete legal documents
- Discuss and negotiate pre-arranged funerals with clients
- Manage funeral home operations including hiring and directing staff, maintaining financial records, preparing accounts and ordering merchandise
- Supervise embalmers, funeral attendants and other funeral home staff
- May perform same duties as embalmers.

Embalmers perform some or all of the following duties:

- Preserve, sanitize and prepare human remains for funeral services
- Perform cosmetic and restorative work on human remains
- Supervise funeral attendants and other funeral home staff.

Employment requirements

- Completion of secondary school is usually required for funeral directors and embalmers.
- Embalmers usually require completion of a two to three-year apprenticeship program for embalmers
  and
  Completion of a qualifying examination.
- Embalmers require licensure in all provinces except British Columbia.
- Funeral directors usually require a year of training under the supervision of a licensed funeral director
  and
  Completion of a qualifying examination.
- Funeral directors require licensure in all provinces except Prince Edward Island and British Columbia.
- Funeral directors are required to be licensed as embalmers in all provinces except Prince Edward Island, Saskatchewan and British Columbia.

Classified elsewhere

- Bereavement counsellors (in 4153 *Family, Marriage and Other Related Counsellors*)
- Funeral attendants (in 6683 *Other Elemental Service Occupations*)
- Funeral services general managers (in 0015 *Senior Managers – Trade, Broadcasting and Other Services, n.e.c.*)

6411 Sales Representatives, Wholesale Trade (Non-Technical)

Sales Representatives, Wholesale Trade (Non-Technical) sell non-technical goods and services to retail, wholesale, commercial, industrial and professional clients. They are employed by establishments that produce or provide goods and services such as petroleum companies, food, beverage and tobacco producers, clothing manufacturers, motor vehicles and parts manufacturers, hotels, business services firms and transportation companies. Sales representatives, wholesale trade who are supervisors are also included in this unit group.

Examples of titles classified in this unit group

Account Executive – Wholesale Trade
Food Products Sales Representative
Freight Sales Agent
Graphic Design Sales Representative
Hotel Accommodations Sales Executive
Liquor Sales Representative – Wholesale
Magazine Sales Representative – Wholesale
Oil Distributor
Periodicals Sales Representative
Security Services Sales Consultant
Supervisor, Wholesale Trade Representatives
Transfer Company Agent

Main duties

Sales Representatives, Wholesale Trade (Non-Technical) perform some or all of the following duties:

- Promote sales to existing clients
- Identify and solicit potential clients
- Provide clients with a presentation on the benefits and uses of goods or services
- Estimate or quote prices, credit terms, warranties and delivery dates
- Prepare or oversee preparation of sales contracts
- Consult with clients after sale to resolve problems and to provide ongoing support
- Review and adapt to information regarding product innovations, competitors and market conditions
- May supervise the activities of other sales representatives.

Employment requirements

- Completion of secondary school is required.
- A university degree or completion of a college or other program may be required.
- Experience in sales or in an occupation related to the product or service is usually required.
- Supervisors and senior sales representatives require experience.

Additional information

- Progression to sales management positions is possible with additional training or experience.

Classified elsewhere

- *Retail Salespersons and Sales Clerks* (6421)
- *Sales, Marketing and Advertising Managers* (0611)
- *Technical Sales Specialists, Wholesale Trade* (6221)

6421 Retail Salespersons and Sales Clerks

Retail Salespersons and Sales Clerks sell or rent a range of goods and services in stores and other retail businesses and in wholesale businesses that sell on a retail basis to the general public.

Examples of titles classified in this unit group

Audio Equipment Salesperson
Automobile Salesperson
Car Rental Agent
Clothing Salesperson
Computer Salesperson – Retail
Counter Clerk – Retail
Department Store Clerk
Furniture Salesperson
Hardware Store Clerk
Jewellery Salesperson
Retail Sales Clerk
Retail Salesperson

Main duties

Retail Salespersons and Sales Clerks perform some or all of the following duties:

- Greet customers and discuss the type, quality and quantity of merchandise sought for purchase or rental
- Advise customers on use and care of merchandise
- Estimate or quote prices, credit terms, trade-in allowances, warranties and delivery dates
- Prepare merchandise for purchase or rental
- Prepare sales contracts and accept cash, cheque, credit card or automatic debit payment
- Assist in the display of merchandise
- Maintain sales records for inventory control.

Employment requirements

- Completion of secondary school may be required.
- Demonstrated sales ability and product knowledge are usually required for retail salespersons who sell complex or valuable merchandise, such as automobiles, antiques or computers.

Additional information

- Progression to retail supervisory positions is possible with additional training or experience.

Classified elsewhere

- *Cashiers* (6611)
- Retail stock clerks (in 6622 *Grocery Clerks and Shelf Stockers*)
- Sales clerk supervisors (in 6211 *Retail Trade Supervisors*)

6431 Travel Counsellors

Travel Counsellors advise clients on travel options and tour packages, make bookings and reservations, prepare tickets and receive payment. They are employed in travel agencies, transportation and tourism firms and hotel chains.

Examples of titles classified in this unit group

Travel Agent
Travel Consultant
Travel Counsellor

Main duties

Travel Counsellors perform some or all of the following duties:

- Provide travel information to clients regarding destinations, transportation and accommodation options and travel costs
- Plan and organize vacation travel for individuals or groups
- Make transportation and accommodation reservations using computerized reservation and ticketing system
- Sell single fare tickets and package tours to clients
- Promote particular destinations, tour packages and other travel services
- Provide travel tips regarding tourist attractions, foreign currency, customs, languages and travel safety.

Employment requirements

- Completion of secondary school is required.
- A college diploma or vocational training in travel or tourism is usually required.
- Certification with the Canadian Institute of Travel Counsellors may be required. A Certified Travel Counsellor designation is granted after three years of work experience in the industry and the completion of mandatory courses and examinations.

Additional information

- Progression to managerial positions is possible with experience.

Classified elsewhere

- Airline ticket agents (in 6433 *Airline Sales and Service Agents*)
- Convention co-ordinators (in 1226 *Conference and Event Planners*)
- Travel agency managers (in 0621 *Retail Trade Managers*)

6432 Pursers and Flight Attendants

Airline pursers and flight attendants ensure the safety and comfort of passengers during flights. Ship pursers attend to the safety and comfort of passengers aboard ships. Airline pursers and flight attendants are employed by airline companies. Ship pursers are employed by tour or cruise boat companies.

Examples of titles classified in this unit group

Flight Attendant
Flight Service Director
Passenger Service Director
Purser, Airline
Ship Purser

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Flight attendants greet passengers, explain safety procedures, attend to safety of passengers during take-offs, landings and emergencies, serve food and beverages to passengers and make flight announcements.
- Flight pursers and passenger service directors co-ordinate the activities of flight attendants, provide service to passengers during flight and complete reports.
- Ship pursers supervise ship attendants, arrange activities for passengers and conduct ship's business, such as signing on crew, maintaining payroll records, assisting passengers in preparing customs declarations and supervising baggage storage.

Employment requirements

- Flight attendants and flight pursers require the completion of secondary school and a Transport Canada approved training program.
- Flight pursers require experience as a flight attendant.
- Ship pursers may require experience as a ship attendant.
- Flight attendants and ship pursers usually require experience working with the public.

Additional information

- There is little mobility between airline pursers and ship pursers.

Classified elsewhere

- Food and beverage servers on trains (in 6453 *Food and Beverage Servers*)
- Ship and rail service attendants (in 6672 *Other Attendants in Accommodation and Travel (Except Airline Travel)*)

6433 Airline Sales and Service Agents

Airline Sales and Service Agents issue tickets, make reservations, trace missing baggage, arrange for cargo shipments and perform other related customer service duties to assist airline passengers. Airline Sales and Service Agents are employed by airline companies. Load planners, who plan the positioning of cargo on aircraft, are also included in this unit group.

Examples of titles classified in this unit group

Airline Baggage Agent
Airline Cargo Agent
Baggage Tracer, Airline
Counter Services Agent, Airline
Customer Service Agent, Airline
Load Planner, Airline
Passenger Agent, Airline
Reservation Agent, Airline
Sales and Service Agent, Airline
Station Agent, Airline
Ticket Agent, Airline

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Airline passenger and ticket agents prepare and issue tickets, assign seats, prepare boarding passes, check baggage, attend boarding gates, assist pre-boarding passengers and provide information on fares and flight schedules and routes.
- Airline baggage agents trace lost, delayed or misdirected baggage for customers.
- Airline cargo agents weigh cargo and compute freight costs, calculate charges for services and insurance, process bills of landing, cargo manifests and other documents, trace lost or misdirected cargo and maintain shipping and other records.
- Airline reservation agents reserve seats for tour companies, travel agencies, wholesalers and the general public using computerized reservation systems.
- Airline station agents complete pre-flight documents regarding passenger and cargo load, catering count, special requests and other flight information and relay operational messages to operations control and downline stations. They also perform duties of ticket, baggage and cargo agents.
- Airline load planners calculate load weights for compartments of aircraft using charts and computers and plan load to distribute and balance cargo.

Employment requirements

- Completion of secondary school is usually required.
- Several weeks of on-the-job and classroom training are provided for all occupations in this unit group.
- Airline station agents usually require experience as a ticket, baggage or cargo agent.
- Load planners require a restricted radio operator's licence and usually require airline operations experience.

Additional information

- Progression to supervisory positions is possible with experience.
- Depending on the size of the airline or airport, the duties of workers in this unit group may overlap.

Classified elsewhere

- *Ticket and Cargo Agents and Related Clerks (Except Airline)* (6434)
- *Travel Counsellors* (6431)
- Airline cargo and baggage handlers (in 7437 *Air Transport Ramp Attendants*)
- Supervisors of airline sales and service agents (in 6216 *Other Service Supervisors*)

6434 Ticket and Cargo Agents and Related Clerks (Except Airline)

Ticket and Cargo Agents and Related Clerks (Except Airline), quote fares and rates, make reservations, issue tickets, process cargo shipment, check baggage and perform other related customer service duties to assist travellers. They are employed by bus and railway companies, steamship lines, boat cruise operators, and other public transit establishments and by travel wholesalers.

Examples of titles classified in this unit group

Bus Ticket Agent
Cargo Agent (Except Airline)
Counter Services Agent, Railway
Marine Cargo Agent
Railway Passenger Agent
Reservation Clerk, Railway
Steamship Agent
Ticket Agent (Except Airline)

Main duties

Ticket Agents in this unit group perform some or all of the following duties:

- Answer customer inquiries, quote fares and assist clients in planning travel times and routes
- Reserve seats for tour companies, travel agencies, wholesalers and the general public
- Issue tickets, handle cash transactions and check baggage
- Receive and record bookings for package tours from retail travel agencies and supply information regarding available vacancies when working for wholesale travel companies

Cargo Agents in this unit group perfrom some or all of the following duties:

- Quote fare and rates for cargo shipment
- Compute shipment costs including charges for services and insurance using rate tables and schedules and prepare and maintain shipping and other documents
- Check in passenger baggage and sort for loading by baggage handlers or may load baggage directly into buses, railway cars or cruise ships
- Trace lost or misdirected passenger baggage or cargo shipment.

Employment requirements

- Completion of secondary school is usually required.
- Up to ten weeks of training is provided.

Additional information

- Progression to supervisory positions is possible through experience.
- Ticket agents and cargo agents may perform the same duties depending on the size and location of the operations.

Classified elsewhere

- *Airline Sales and Service Agents* (6433)
- *Travel Counsellors* (6431)
- Baggage handlers in rail, marine and motor transportation (in 6672 *Other Attendants in Accomodation and Travel (Except Airline Travel)*)
- Supervisors of ticket and cargo agents and related clerks in this unit group (in 6216 *Other Service Supervisors*)

6435 Hotel Front Desk Clerks

Hotel Front Desk Clerks make room reservations, provide information and services to guests and receive payment for services. They are employed by hotels, motels and resorts.

Examples of titles classified in this unit group

Front Desk Clerk
Front Office Clerk
Guest Service Agent
Hotel Front Desk Clerk
Night Clerk
Reservations Clerk
Room Clerk

Main duties

Hotel Front Desk Clerks perform some or all of the following duties:

- Make room reservations
- Register arriving guests and assign rooms
- Answer enquiries regarding hotel services and registration by letter, telephone and in person and respond to guests' complaints
- Compile and check daily record sheets, guest accounts, receipts and vouchers using computerized or manual systems
- Present statements of charges to departing guests and receive payment.

Employment requirements

- Completion of secondary school is required.
- Completion of a college program in front desk operations or hotel management may be required.

Additional information

- Progression to senior positions such as accommodations manager is possible with additional training and experience.

Classified elsewhere

- *Travel Counsellors* (6431)
- *Other Attendants in Accommodation and Travel (except Airline Travel)* (6672)

6441 Tour and Travel Guides

Tour and Travel Guides escort individuals and groups on trips, on sightseeing tours of cities and on tours of historical sites and establishments such as famous buildings, manufacturing plants, cathedrals and theme parks. They also provide descriptions and background information on interesting features. Tour and Travel Guides are employed by tour operators, resorts and other establishments or may be self-employed.

Examples of titles classified in this unit group

Calèche Driver
Factory Tour Guide
Sightseeing Guide
Tour Guide
Tourist Guide
Travel Guide

Main duties

Tour guides perform some or all of the following duties:

- Transport or escort individuals or groups on tours of cities, waterways and establishments
- Describe points of interest, answer questions and supply information
- May collect admission fees and sell souvenirs.

Travel guides perform some or all of the following duties:

- Escort individuals and groups on vacation and business trips
- Ensure that reservations for transportation and accommodations are confirmed and that prepared itineraries are met
- Visit and describe points of interest and plan and carry out recreational activities
- Resolve problems with itineraries, service and accommodations.

Employment requirements

- On-the-job training is provided.
- Knowledge of both official languages or an additional language may be required for some positions in this group.

Classified elsewhere

- *Outdoor Sport and Recreational Guides* (6442)
- Museum guides and historical interpreters (in 5212 *Technical Occupations Related to Museums and Galleries*)
- Tour operators (in 0621 *Retail Trade Managers*)

6442 Outdoor Sport and Recreational Guides

Outdoor Sport and Recreational Guides organize and conduct trips or expeditions for sports enthusiasts, adventurers, tourists and resort guests. They are employed by private companies and resorts or may be self-employed.

Examples of titles classified in this unit group

Canoeing Guide
Dude Wrangler
Fishing Guide
Hot Air Balloonist
Hunting Guide
Mountain Climbing Guide
Outfitter
Rafting Guide

Main duties

Outdoor Sport and Recreational Guides perform some or all of the following duties:

- Plan itinerary for trip or expedition and arrange transportation or transport individuals or group to site
- Assemble necessary equipment and supplies, such as camping gear, rafts, life jackets, fishing tackle and food
- Lead or escort individuals or groups and advise on safety and emergency measures, techniques and the use of equipment
- Advise on specific regulations such as hunting and fishing laws and boating regulations
- Provide first aid in emergency situations
- May prepare meals for group and set up camp.

Employment requirements

- Knowledge of a particular terrain or body of water and demonstrated ability in the guided activity are required for employment in this group.
- Hot air balloon pilots require completion of 10 hours of ground school, 16 hours of pilot-in-command experience and federal licensure.

Additional information

- Outdoor sport and recreational guides usually work on a seasonal basis.

Classified elsewhere

- *Tour and Travel Guides* (6441)
- *Program Leaders and Instructors in Recreation and Sport* (5254)

6443 Amusement Attraction Operators and Other Amusement Occupations

This unit group includes amusement occupations such as operators of amusement rides, games and other attractions, and workers in gambling casinos. They are employed by amusement parks, fairs, exhibitions, carnivals and gambling casinos, or they may be self-employed. Supervisors of gambling casino workers are included in this unit group.

Examples of titles classified in this unit group

Amusement Attraction Operator
Amusement Ride Operator
Baccarat Dealer
Blackjack Dealer
Game Concession Operator
Keno Dealer
Supervisor, Gambling Tables

Main duties

Amusement Attraction Operators perform some or all of the following duties:

- Drive trucks, vans and other vehicles to transport amusement rides, games and other attractions to amusement attraction sites
- Set up rides, fun houses, game concessions and other amusement attractions
- Perform routine maintenance and safety inspections of attraction equipment
- Operate rides and other attractions, oversee game activities and ensure safety of participants
- Supervise amusement attraction attendants and may sell tickets.

Gambling Dealers perform some or all of the following duties:

- Operate gambling tables and games such as roulette, blackjack, keno and baccarat
- Ensure that the rules of the games are followed
- Determine winners, calculate and pay-out winning bets and collect losing bets
- May supervise staff, train new dealers and monitor gambling tables.

Employment requirements

- Some secondary school education may be required.
- On-the-job training is usually provided for gambling table operators.

Additional information

- In data provided by Statistics Canada, unit groups 6443 and 6671 are combined to form 6670 *Attendants in Amusement, Recreation and Sport*.

Classified elsewhere

- Amusement ride, sports facility and bingo hall attendants (in 6671 *Attendants in Recreation and Sport*)
- Supervisors of attendants in recreation and sport (in 6216 *Other Service Supervisors*)

6451 Maîtres d'hôtel and Hosts/Hostesses

Maîtres d'hôtel and Hosts/Hostesses greet patrons and escort them to tables, and supervise and co-ordinate the activities of food and beverage servers. They are employed in restaurants, hotel dining rooms, private clubs, cocktail lounges and similar establishments.

Examples of titles classified in this unit group

Host/Hostess, Food Service
Maître d'
Maître d'hôtel
Restaurant Host/Hostess

Main duties

Maîtres d'hôtel and Hosts/Hostesses perform some or all of the following duties:

- Receive and record patrons' reservations and assign tables
- Greet patrons at entrance of dining room, restaurant, or lounge and escort them to tables or other seating areas
- Speak with patrons to ensure satisfaction with food and service, and attend to complaints
- Inspect dining and serving areas for cleanliness
- Supervise and co-ordinate activities of food and beverage servers and other serving staff
- Accept payment from patrons for food and beverage
- Prepare work schedules and payrolls
- Interview candidates for food and beverage server positions and train new employees.

Employment requirements

- Completion of secondary school is usually required.
- Several weeks of on-the-job training are usually provided.
- Maîtres d'hôtel require experience as a formal or captain waiter/waitress or other food service experience.

Classified elsewhere

- *Food and Beverage Servers* (6453)
- *Food Service Supervisors* (6212)

6452 Bartenders

Bartenders mix and serve alcoholic and non-alcoholic beverages. They are employed in restaurants, hotels, bars, taverns, private clubs, banquet halls and other licensed establishments. Supervisors of Bartenders are included in this unit group.

Examples of titles classified in this unit group

Barkeeper
Bartender
Head Bartender
Service Bartender

Main duties

Bartenders perform some or all of the following duties:

- Take beverage orders from serving staff or directly from patrons
- Mix liquor, soft drinks, water and other ingredients to prepare cocktails and other drinks
- Prepare mixed drinks, wine, draft or bottled beer and non-alcoholic beverages for food and beverage servers or serve directly to patrons
- Collect payment for beverages and record sales
- Maintain inventory and control of bar stock and order supplies
- Clean bar area and wash glassware
- May supervise other bartenders and bar staff.

Employment requirements

- Completion of secondary school may be required.
- Completion of college or other program in bartending
  or
  Completion of courses in mixing drinks is usually required.

Additional information

- Progression to managerial positions in food and beverage service is possible with experience.

Classified elsewhere

- *Food and Beverage Servers* (6453)

6453 Food and Beverage Servers

Food and Beverage Servers take patrons' food and beverage orders and serve orders to patrons. They are employed in restaurants, hotels, bars, taverns, private clubs, banquet halls and similar establishments.

Examples of titles classified in this unit group

Banquet Server
Captain Waiter/Waitress
Chief Wine Steward
Cocktail Waiter/Waitress
Food and Beverage Server
Formal Waiter/Waitress
Waiter/Waitress
Wine Steward

Main duties

Food and Beverage Servers perform some or all of the following duties:

- Greet patrons, present menus, make recommendations and answer questions regarding food and beverages
- Take orders and relay to kitchen and bar staff
- Recommend wines that complement patrons' meals
- Serve food and beverages
- Prepare and serve specialty foods at patrons' tables
- Present bill to patrons and accept payment.

Employment requirements

- Completion of secondary school may be required.
- Formal waiters/waitresses may require completion of college or vocational school courses.
- On-the-job training is usually provided.
- Wine stewards may require courses in wine selection and service
  or
  Experience as a captain waiter/waitress or formal waiter/waitress.

Classified elsewhere

- *Maîtres d'hôtel and Hosts/Hostesses* (6451)
- *Restaurant and Food Service Managers* (0631)

6461 Sheriffs and Bailiffs

Sheriffs and Bailiffs enforce court orders, serving writs and summonses and seizures of property. They are employed by the provincial courts or may be self-employed.

Examples of titles classified in this unit group

Bailiff
Deputy Sheriff
Sheriff
Sheriff's Bailiff
Sheriff's Officer

Main duties

Sheriffs and Bailiffs perform some or all of following duties:

- Serve statements of claims, summonses, jury summonses, orders to pay alimony, and other court orders
- Serve writs of execution by seizing and selling property and distributing the proceeds according to court decisions
- Locate property and make seizures and removals under various acts of Parliament
- Provide courthouse security for judges
- Escort prisoners to and from courts and correctional institutions
- Prepare reports and affidavits
- Attend court, escort witnesses and assist in maintaining order.

Employment requirements

- Bailiffs usually require completion of secondary school and some work experience related to law enforcement.
- A college diploma in legal studies may be required.
- Sheriffs require experience as bailiffs or deputy sheriffs.

Additional information

- Progression to supervisory positions is possible with additional experience and in-house training.

Classified elsewhere

- *Correctional Service Officers* (6462)
- *Court Clerks* (1443)
- *Police Officers (Except Commissioned)* (6261)

6462 Correctional Service Officers

Correctional Service Officers guard prisoners and detainees and maintain order in correctional institutions and other places of detention. They are employed by federal, provincial and municipal governments.

Examples of titles classified in this unit group

Correctional Facility Guard
Correctional Service Officer
Detention Attendant
Prison Guard
Supervisor, Correctional Officers

Main duties

Correctional Service Officers perform some or all of the following duties:

- Observe conduct and behaviour of prisoners to prevent disturbances and escapes
- Supervise prisoners during work assignments, meals and recreation periods
- Patrol assigned area and report any problems to supervisor
- Escort prisoners in transit and during temporary leaves
- Prepare admission and other reports
- May supervise and co-ordinate work of other correctional service officers.

Employment requirements

- Completion of secondary school is required.
- Completion of a college correctional officer program is usually required.
- Correctional service supervisors require experience as a correctional service officer.

Classified elsewhere

- *Managers in Social, Community and Correctional Services* (0314)
- *Social Workers* (4152)
- Detention home workers (in 4212 *Community and Social Service Workers*)

6463 By-law Enforcement and Other Regulatory Officers, n.e.c.

Officers and inspectors in this unit group enforce by-laws and regulations of provincial and municipal governments. They are employed by provincial and municipal governments and agencies.

Examples of titles classified in this unit group

Animal Control Officer
By-law Enforcement Officer
Commercial Transport Inspector
Garbage Collection Inspector
Liquor Licence Inspector
Parking Control Officer
Property Standards Inspector
Taxi Inspector
Zoning Inspector

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Animal control officers respond to citizen complaints concerning stray domestic animals, livestock and wildlife; issue warnings and citations to owners; and impound lost, homeless and dangerous animals.
- By-law enforcement officers enforce municipal and provincial regulations, investigate complaints, and issue warnings and citations to commercial and residential property owners and occupants.
- Commercial transport inspectors inspect commercial vehicles to ensure compliance with regulations governing load restrictions, the transportation of hazardous materials, and public safety.
- Garbage collection inspectors investigate complaints concerning infractions of garbage collection by-laws.
- Liquor license inspectors conduct inspections of licensed establishments, advise licensees on laws and regulations, and report contravention of laws and regulations to provincial liquor control boards and agencies.
- Parking control officers enforce parking by-laws on city streets, regional roads and municipal properties.
- Taxi inspectors inspect taxicabs for mechanical reliability, cleanliness, licensing and meter accuracy; investigate public complaints, issue summonses and prepare reports; and give evidence to city councils, taxi commissions and in court.

Employment requirements

- Completion of secondary school is required.
- Completion of a college program or courses in law and security or other related field
  or
  Experience in a related administrative or regulatory occupation is usually required.
- On-the-job training is provided.

Classified elsewhere

- *Engineering Inspectors and Regulatory Officers* (2262)
- *Immigration, Unemployment Insurance and Revenue Officers* (1228)
- *Other Protective Service Occupations* (6465)
- *Police Officers (Except Commissioned)* (6261)
- *Sheriffs and Bailiffs* (6461)

6464 Occupations Unique to the Armed Forces

This unit group includes personnel in occupations unique to the armed forces, such as soldiers in armour, artillery, infantry, airborne and maritime branches who provide collective defense measures to protect Canadian waters, land, airspace and other interests. They are employed by the Canadian Armed Forces.

Examples of titles classified in this unit group

Air Defence Technician
Armoured Vehicle Crewmember
Artillery Soldier
Assault Pioneer
Field Engineer
Infantry Soldier
Naval Weapons Technician
Sonar Operator
Tank Driver
Weapons Operator

Main duties

Personnel in Occupations Unique to the Armed Forces perform some or all of the following duties:

- Operate armoured vehicles, artillery, hand-held weapons and other military combat equipment and defence systems
- Engage in peacekeeping operations and enforce ceasefire agreements
- Provide aid in emergency situations, such as civil disorder, natural disasters and major accidents
- Engage in drills and other training in preparation for peacekeeping, combat and natural disaster relief duties
- Perform administrative and guard duties.

Personnel in this unit group specialize in specific combat functions.

Employment requirements

- Completion of secondary school is usually required.
- Three months of basic military training are provided.
- Specialized training in the operation and maintenance of military equipment and systems is provided.

Additional information

- Progression to commissioned officer occupations is possible with additional training and experience.
- Data provided by Statistics Canada for *Occupations Unique to the Armed Forces* (6464) includes *all* non-commissioned armed forces personnel. For further information, see introduction.

Classified elsewhere

- *Commissioned Officers, Armed Forces* (0643)

Occupations which exist in the armed forces and for which there are civilian counterparts are classified with those occupations. For example:

- Military police officers (in 6261 *Police Officers (Except Commissioned)*)
- Musicians – military (in 5133 *Musicians and Singers*)
- Vehicle technicians – military (in 7321 *Motor Vehicle Mechanics, Technicians and Mechanical Repairers*)

6472 Elementary and Secondary School Teacher Assistants

This unit group includes workers who assist elementary and secondary school teachers and counsellors. They are employed in public and private elementary and secondary schools.

Examples of titles classified in this unit group

Educational Resources Assistant
Lunch Room Supervisor
Program Assistant, Education
Special Education Assistant
Staff Assistant, Education
Teacher's Aide
Teacher's Assistant
Secondary School Teacher's Assistant

Main duties

Elementary and Secondary School Teacher Assistants perform some or all of the following duties:

- Assist students with lessons under direct supervision of classroom teacher
- Accompany and supervise students during activities in school gymnasiums, laboratories, libraries, resource centres and on field trips
- Assist special needs students, such as those with mental or physical disabilities, with mobility, communication and personal hygiene
- Operate or assist teacher in operation of projectors, tape recorders and other audio-visual or electronic equipment
- Carry out behaviour modification, personal development and other therapeutic programs under supervision of professionals such as special education instructors, psychologists or speech-language pathologists
- Monitor students during recess or noon hour
- Assist in school library or office and perform other duties assigned by a school principal.

Employment requirements

- Completion of secondary school is usually required.
- College courses in child care or related fields may be required for some positions.
- Teacher assistants who aid students with special needs may require specialized training and experience.

Additional information

- Mobility to other occupations related to child and adolescent care is possible with experience.

Classified elsewhere

- *Early Childhood Educator Assistants* (6473)
- *Early Childhood Educators* (4214)
- *Elementary School and Kindergarten Teachers* (4142)
- *Post-Secondary Teaching and Research Assistants* (4122)

6473 Early Childhood Educator Assistants

Early Childhood Educator Assistants supervise pre-school children in day care centres and nursery schools, and under the supervision of an early childhood educator, they lead children in activities to stimulate and develop their intellectual, physical and emotional growth. They are employed in day-care centres and nursery schools.

Examples of titles classified in this unit group

Child-care Worker Assistant
Day-care Helper
Day-care Worker's Assistant
Early Childhood Educator Assistant
Early Childhood Program Staff Assistant
Pre-school Helper

Main duties

Early Childhood Educator Assistants perform some or all of the following duties:

- Supervise children in indoor and outdoor play and during rest period
- Lead children in activities by telling stories, teaching songs and preparing craft materials
- Prepare and serve snacks
- Guide and assist children in the development of proper eating, dressing and toilet habits
- Submit written observations on children to supervisor
- Attend staff meetings to discuss progress and problems of children
- Assist supervisor in keeping records
- Maintain day-care equipment and assist in housekeeping duties.

Employment requirements

- Completion of secondary school is usually required.
- Experience in child care, such as babysitting, is required.

Additional information

- In data provided by Statistics Canada, unit groups 4214 and 6473 are combined to form 6470 *Early Childhood Educators and Assistants*.

Classified elsewhere

- *Early Childhood Educators* (4214)
- *Elementary School and Kindergarten Teachers* (4142)
- Teacher aides (in 6472 *Elementary and Secondary School Teacher Assistants*)

6474 Babysitters, Nannies and Parent's Helpers

Babysitters care for children on an ongoing or short-term basis. They are usually self-employed or may be employed by babysitting agencies. Nannies care for children in the employer's residence and provide for their health and physical and social development. Parent's Helpers assist parent with child-care and household duties. Nannies and Parent's Helpers are employed by private households, where they may also reside.

Examples of titles classified in this unit group

Babysitter
Live-in Caregiver
Nanny
Parent's Helper

Main duties

Babysitters perform some or all of the following duties:

- Supervise and care for children in the absence of regular caregiver
- Bathe, diaper and feed infants and children
- Organize games, activities and outings to provide amusement and exercise
- May perform housekeeping duties and prepare meals for children according to employer's instructions.

Nannies and live-in caregivers perform some or all of the following duties:

- Supervise and care for children in employer's residence and may reside in employer's home
- Bathe, diaper and feed infants and children
- Oversee children's activities, such as meals and rest periods, as instructed by employer
- Instruct children in personal hygiene and social development
- Organize games, activities and outings to provide amusement and exercise
- Prepare meals and launder clothing for children and may perform these and other housekeeping duties for the household.

Parent's helpers perform some or all of the following duties:

- Assist parent in child supervision and household management
- Bathe, diaper and feed infants and children under direction of parent
- Assist with, or may be responsible for, meal preparation, laundry, washing dishes, running errands and other routine housekeeping duties.

Employment requirements

- Completion of secondary school may be required.
- Nannies and live-in caregivers may require completion of a training program in child care or a related field.
- Child care or home management experience may be required.
- Demonstrated ability to perform work is usually required.
- First-aid certification may be required.

Additional information

- There is mobility among occupations in this group.

Classified elsewhere

- *Early Childhood Educator Assistants* (6473)
- *Visiting Homemakers, Housekeepers and Related Occupations* (6471)
- Companions and foster parents (in 6471 *Visiting Homemakers, Housekeepers and Related Occupations*)
- Daycare workers (in 4214 *Early Childhood Educators*)

6481 Image, Social and Other Personal Consultants

Image, Social and Other Personal Consultants advise clients on their personal appearance, speaking style, manners or other behaviours in order to improve personal or business images. They are employed by beauty salons, fashion boutiques, modelling schools, image consulting companies or may be self-employed.

Examples of titles classified in this unit group

Colour Consultant, Fashion
Etiquette Consultant
Fashion and Wardrobe Consultant
Image Consultant
Professional Image Consultant
Public Speaking Consultant
Wardrobe Consultant
Wedding Consultant
Weight Loss Consultant

Main duties

The following is a summary of the main duties of some occupations in this unit group:

- Image consultants advise clients on hair colour, hairstyle, make-up, and clothing and accessories, and may advise on posture and general appearance and manner.
- Make-up consultants advise clients on type, colour and application of make-up.
- Colour consultants advise clients on choice of colours for clothing that will complement their appearance.
- Wedding consultants advise clients on the selection of wedding gowns, floral arrangements, banquet facilities, wedding invitations and other items related to weddings.
- Weight loss consultants administer commercial weight loss programs, advise clients on diet and exercise and provide related support services.

Employment requirements

- Completion of secondary school is usually required.
- Specialized training courses are available for colour consultants, make-up and skin care consultants, weight loss consultants and most other occupations in this unit group.
- Experience and expertise in fashion, art, modelling or related fields is usually required.

Classified elsewhere

- *Hairstylists and Barbers* (6271)
- Cosmeticians and manicurists (in 6482 *Estheticians, Electrologists and Related Occupations*)
- Modelling school instructors (in 4216 *Other Instructors*)

6482 Estheticians, Electrologists and Related Occupations

Workers in this unit group provide facial and body treatments designed to enhance an individual's physical appearance. They are employed in beauty salons, electrolysis studios, scalp treatment clinics and other similar establishments or they may be self-employed.

Examples of titles classified in this unit group

Beauty Treatment Operator
Cosmetician
Electrologist
Electrologist Technician
Esthetician
Manicurist
Pedicurist
Scalp Treatment Specialist
Tattoo Artist

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Estheticians give facial and other skin treatments using specialized products and techniques.
- Cosmeticians apply make-up to clients and advise on its use.
- Electrologists permanently remove unwanted hair from client face or body using specialized electrical equipment.
- Manicurists and pedicurists clean, shape and polish fingernails and toenails and provide related treatments.
- Scalp treatment specialists apply medicated lotions to treat scalp conditions and hair loss.
- Tattoo artists apply permanent designs to customer's skin, using electric needles and chemical dyes.

Employment requirements

- Completion of high school, college or beauty school programs for cosmeticians, estheticians, electrologists, manicurists and pedicurists is required
  or
  On-the-job training is provided.
- Beauty treatment operators and manicurists in Manitoba require provincial licensure.
- Skin care specialists and manicurists in Nova Scotia require provincial licensure.

Additional information

- There is little or no mobility among the different occupations in this unit group without additional specialized training.

Classified elsewhere

- *Hairstylists and Barbers* (6271)
- *Image, Social and Other Personal Consultants* (6481)

6483 Pet Groomers and Animal Care Workers

Pet Groomers and Animal Care Workers feed, handle, train and groom animals and assist veterinarians, animal health technologists and animal breeders. They are employed by animal hospitals and clinics, animal shelters, breeding and boarding kennels, zoos, pet grooming service companies and laboratories.

Examples of titles classified in this unit group

Animal Care Worker
Dog Groomer
Dog Trainer
Kennel Attendant
Laboratory Animal Attendant
Pet Groomer
Pound Attendant
Veterinary Attendant
Zoo Attendant

Main duties

Pet Groomers and Animal Care Workers perform some or all of the following duties:

- Prepare food and feed animals, fish or birds at scheduled intervals
- Clean and disinfect cages, pens and surrounding areas
- Shampoo, clip and groom animals
- Assist veterinarians and animal health technologists to inoculate and treat animals
- Assist animal breeders to handle and nurture animals
- Assist scientists and researchers in conducting laboratory tests with animals
- Monitor and document animal behaviour
- Train dogs to obey commands and perform specific duties in response to signals.

Employment requirements

- Completion of secondary school is usually required.
- Depending on the type of work performed, training courses in animal handling, grooming or dog training may be required.

Additional information

- Progression to animal health technology occupations is possible with additional training.

Classified elsewhere

- *Animal Health Technologists* (3213)
- Animal nutritionists (in 2121 *Biologists and Related Scientists*
- Horse trainers (in 8253 *Farm Supervisors and Specialized Livestock Workers*)
- Horseshoers (in 7383 *Other Trades and Related Occupations*)
- Marine mammal trainers (in 2221 *Biological Technologists and Technicians*)
- Sheep shearers (in 8431 *General Farm Workers*)

6484 Other Personal Service Occupations

This unit group includes occupations, not elsewhere classified, that provide psychic consulting, fortune telling, astrological and similar services. Workers in this unit group are usually self-employed.

Examples of titles classified in this unit group

Astrologer
Fortune Teller
Psychic Consultant
Psychic Reader

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Astrologers chart and interpret stellar and planetary positions on a horoscope to predict future events and trends for a client or the general public.
- Psychic consultants provide personal advice to clients based on various schools of thought.

Employment requirements

- A period of training under the guidance of a practitioner is usually required.

6611 Cashiers

Cashiers record and receive payment from customers in stores, restaurants, theatres, business offices and other retail and wholesale establishments for the purchase of goods, services and admission.

Examples of titles classified in this unit group

Box Office Cashier
Cafeteria Cashier
Grocery Store Cashier
Office Cashier
Race Track Cashier
Self-Serve Gas Bar Cashier
Theatre Cashier

Main duties

Cashiers perform some or all of the following duties:

- Establish or identify price of goods, services or admission and tabulate bill using calculator, cash register or optical price scanner
- Receive payment by cash, cheque, credit card or automatic debit
- Wrap or place merchandise in bags
- Provide information to customers
- Calculate total payments received at the end of work shift and reconcile with total sales.

Employment requirements

- Some secondary school education is usually required.
- Eligibility for bonding may be required.

Additional information

- Cashiers may progress to supervisory positions, such as head cashier, with additional training or experience.

Classified elsewhere

- *Retail Salespersons and Sales Clerks* (6421)
- *Service Station Attendants* (6621)
- *Tellers, Financial Services* (1433)
- Head cashiers (in 6211 *Retail Trade Supervisors*)

6621 Service Station Attendants

Service Station Attendants employed in automotive service stations sell fuel and other automotive products and perform such services as fueling, cleaning, lubricating and performing minor repairs to motor vehicles. Those employed in marinas sell fuel, rent boats and related equipment, and maintain marina facilities.

Examples of titles classified in this unit group

Gas Station Attendant (except self-serve)
Marina Attendant
Service Station Attendant

Main duties

Automotive service station attendants perform some or all of the following duties:

- Refuel vehicles
- Perform minor service and maintenance such as washing the windshield, checking fluid levels and air pressure, lubricating the vehicle, changing the motor oil and antifreeze and replacing parts such as lightbulbs, oil filters, windshield-wiper blades and fan belts
- Receive payment from customer.

Marina service station attendants perform some or all of the following duties:

- Refuel boats
- Pump boat's marine septic system
- Rent boats, lifejackets and other equipment and record rental data
- Receive payment from customer
- Maintain dock area and marina facilities and assist in seasonal moving of ramps and docks.

Employment requirements

- Some secondary school education is usually required.
- Propane and natural gas pump attendants may require an operator's licence.

Classified elsewhere

- Auto technicians (in 7321 *Motor Vehicle Mechanics, Technicians and Mechanical Repairers*)
- Self-serve gas bar cashiers (in 6611 *Cashiers*)
- Service station managers (in 0621 *Retail Trade Managers*)
- Service station supervisors (in 6211 *Retail Trade Supervisors*)

6622 Grocery Clerks and Shelf Stockers

Grocery Clerks and Shelf Stockers pack customers' purchases, price items, stock shelves with merchandise and fill mail orders. They are employed in retail establishments, such as grocery, hardware and department stores, and in mail-order warehouses.

Examples of titles classified in this unit group

Bag Clerk
Grocery Clerk
Grocery Packer
Order Filler
Price Clerk - Retail
Produce Clerk
Shelf Stocker - Retail
Supermarket Clerk
Warehouse Stock Picker

Main duties

Grocery Clerks and Shelf Stockers perform some or all of the following duties:

- Bag, box or parcel purchases for customers or for shipment or delivery to customers
- Carry customer's purchases to parking lot and pack in vehicle
- Price items using stamp or stickers according to price list
- Stock shelves and display areas and keep stock clean and in order
- Fill mail orders from warehouse stock
- Obtain articles for customers from shelf or stockroom
- Direct customers to the location of articles sought
- Sweep aisles and perform other general cleaning duties.

Employment requirements

- Some secondary school education is usually required.

Classified elsewhere

- *Cashiers* (6611)
- Comparison shopper (in 6623 *Other Elemental Sales Occupations*)
- Meat counter clerk (in 6421 *Retail Salespersons and Sales Clerks*)
- Stock handler (in 7452 *Material Handlers*)
- Supervisor, stock clerks (in 6211 *Retail Trade Supervisors*)

6623 Other Elemental Sales Occupations

This unit group includes workers who sell goods or services during home demonstrations or by telephone soliciting, retail exhibitions or street vending. They are employed by a wide range of retail and wholesale establishments.

Examples of titles classified in this unit group

Canvasser – Retail
Demonstrator – Retail
Direct Distributor – Retail
Door-to-Door Salesperson
Home Demonstrator – Retail
Street Vendor
Telemarketer
Telephone Solicitor

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Direct distributors and door-to-door salespersons sell merchandise by soliciting sales in private homes.
- Street vendors set up and display merchandise on sidewalks or at public events to sell to the public.
- Telephone solicitors and telemarketers contact businesses or private individuals, by telephone, to solicit sales for goods or services.
- Demonstrators show, describe and sell goods or services at wholesale, retail and industrial establishments, and at exhibitions, trade shows and private homes.

Employment requirements

- Some secondary school education is usually required.
- Self-employed street vendors and door-to-door salespersons may require a municipal merchant's permit.

Additional information

- Progression to related supervisory positions is possible with additional training or experience.

Classified elsewhere

- *Cashiers* (6611)
- *Retail Trade Managers* (0621)
- *Retail Trade Supervisors* (6211)
- Kiosk sales clerks (in 6421 *Retail Salespersons and Sales Clerks*)

6631 Elemental Medical and Hospital Assistants

Elemental Medical and Hospital Assistants perform a variety of support functions to assist health care professionals and other health care staff. They are employed in hospitals, medical clinics and offices of health care professionals such as chiropractors, occupational therapists and physiotherapists.

Examples of titles classified in this unit group

Blood Donor Clinic Assistant
Central Supply Aide
Chiropractic Aide
Clinic Assistant
Clinical Laboratory Helper
Occupational Therapy Aide
Optometrist Assistant
Physical Therapy Aide
Physiotherapy Helper
Supply, Processing and Distribution Aide

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Blood donor clinic assistants set up equipment; maintain supplies; record information on donors; monitor donors throughout procedure under the supervision of a registered nurse; and label and process donated blood.
- Central supply aides collect and sort soiled supplies and instruments from hospital departments; operate machines such as instrument washers, sonic sinks, cart washers and steam autoclaves to clean, reprocess and sterilize these supplies for re-use; and assemble packs of sterile supplies and instruments for delivery to hospital departments.
- Chiropractic aides assist patients who are elderly or incapacitated to undress; position patients on table or chair for treatments by chiropractor or for machine treatments; connect treatment machines to patients, as directed by chiropractor; and may perform clerical duties.
- Occupational therapy assistants prepare and maintain work materials and supplies and may assist patients in crafts or other activities as directed by an occupational therapist.
- Physiotherapy assistants accompany patients to treatment rooms; assist patients in the use of therapeutic equipment and with maintenance programs as directed and supervised by a physiotherapist; clean physiotherapy equipment; change linen; and maintain appointment schedules.

Employment requirements

- Some secondary school education and on-the-job training are required for all occupations in this unit group.
- Health care courses or short-term college programs related to the work of medical aides, such as the chiropractic college assistants' course or the program in central supply service techniques, are available and may be required by employers.

Classified elsewhere

- *Other Aides and Assistants in Support of Health Services* (3414)

6641 Food Service Counter Attendants and Food Preparers

Food Service Counter Attendants and Food Preparers prepare, heat and finish cooking simple food items and serve customers at food counters. They are employed in cafeterias, fast food outlets, restaurants, hotels, hospitals, and other establishments.

Examples of titles classified in this unit group

Counter Attendant, Cafeteria
Fast-Food Preparer
Food Counter Attendant
Food Preparer
Ice Cream Counter Attendant
Salad Bar Attendant
Sandwich Maker

Main duties

Food Service Counter Attendants and Food Preparers perform some or all of the following duties:

- Take customers' orders
- Prepare food such as sandwiches, hamburgers, salads, milkshakes and ice cream dishes
- Serve customers at counters or buffet tables
- May receive payment for food items purchased.

Employment requirements

- Some secondary school education is usually required.
- On-the-job training is provided.

Additional information

- There is considerable mobility among jobs in this unit group.
- Movement into other occupations within food preparation and service, such as cook or waiter, is possible with further training and experience.

Classified elsewhere

- *Chefs* (6241)
- *Cooks* (6242)
- *Kitchen and Food Service Helpers* (6642)
- Street food vendors (in 6623 *Other Elemental Sales Occupations*)

6642 Kitchen and Food Service Helpers

Workers in this unit group clear tables, clean kitchen areas, wash dishes, and perform various other activities to assist workers who prepare or serve food and beverages. They are employed in restaurants, hotels, fast food outlets, cafeterias, hospitals and other establishments.

Examples of titles classified in this unit group

Bartender Helper
Bus Boy/Girl
Cook's Helper
Dishwasher
Food Service Helper
Kitchen Helper

Main duties

Kitchen helpers perform some or all of the following duties:

- Wash and peel vegetables and fruit
- Wash work tables, cupboards and appliances
- Remove trash and clear kitchen garbage containers
- Unpack and store supplies in refrigerators, cupboards and other storage areas
- Sweep and mop floors, and perform other duties to assist cook and kitchen staff.

Food service helpers perform some or all of the following duties:

- Clear and clean tables and trays in eating establishments
- Bring clean dishes, flatware and other items to serving areas and set tables
- Replenish condiments and other supplies at tables and serving areas
- Remove dishes before and after courses
- Perform other duties such as scraping and stacking dishes, carrying linen to and from laundry area and running errands.

Dishwashers perform some or all of the following duties:

- Wash dishes, glassware, flatware, pots and pans using dishwasher or by hand
- Place dishes in storage area
- Scour pots and pans, and may clean and polish silverware.

Employment requirements

- Some secondary school education may be required.

Additional information

- There is considerable mobility among jobs in this unit group.
- Movement into other occupations within food preparation and service, such as cook or food server, is possible with further training and experience.

Classified elsewhere

- *Food and Beverage Servers* (6453)
- *Food Service Counter Attendants and Food Preparers* (6641)

6651 Security Guards and Related Occupations

This unit group includes security guards and other related workers who guard property against theft and vandalism, control access to establishments, maintain order and enforce regulations at public events and within establishments. They are employed by private security agencies, retail stores, industrial establishments, museums and other establishments.

Examples of titles classified in this unit group

Airport Security Guard
Armoured Car Guard
Bodyguard
Bouncer
Commissionaire
Crossing Guard
Gate Attendant
Night Watchman/woman
Preboarding Security Guard
Security Guard
Security Officer

Main duties

Workers in this unit group perform some or all of the following duties:

- Control access to establishments, issue passes and direct visitors to appropriate areas
- Patrol assigned areas to guard against theft, shoplifting, vandalism and fire
- Enforce regulations of an establishment to maintain order
- Perform security checks of passengers and luggage at airports
- Drive and guard armoured trucks and deliver cash and valuables to banks, automated teller machines and retail establishments
- May supervise and co-ordinate the activities of other security guards.

Employment requirements

- Some secondary school education is usually required.
- Armoured car drivers require a driver's licence.
- Training is provided for airport security guards and may be provided for other occupations in this unit group.
- Senior security guards and supervisors require experience.
- Security guards carrying firearms require a licence.

Classified elsewhere

- *Correctional Service Officers (6462)*
- Managers of security agencies (in *0123 Other Business Services Managers*)
- Private investigators (in *6465 Other Protective Service Occupations*)

6661 Light Duty Cleaners

Light Duty Cleaners clean the lobbies, hallways, offices and rooms of hotels, hospitals, schools, office buildings and private residences. They are employed by hotels, motels, hospitals, school boards, office building management companies and cleaning service companies.

Examples of titles classified in this unit group

Cleaner
Hospital Cleaner
Hotel Cleaner
House Cleaner
Light Duty Cleaner
Office Cleaner
Room Attendant
Sweeper

Main duties

Light Duty Cleaners perform some or all of the following duties:

- Sweep, mop, wash, wax and polish floors
- Dust furniture and vacuum carpeting and area rugs, draperies and upholstered furniture
- Make beds, change sheets, distribute clean towels and toiletries
- Clean, disinfect and polish kitchen and bathroom fixtures and appliances
- Disinfect operating rooms and other hospital areas
- Pick up debris and empty trash containers
- Wash windows, walls and ceilings.

Employment requirements

- There are no specific education requirements for occupations in this unit group.

Additional information

- Progression to supervisory cleaning positions is possible with additional training or experience.

Classified elsewhere

- *Cleaning Supervisors* (6215)
- *Janitors, Caretakers and Building Superintendents* (6663)
- *Specialized Cleaners* (6662)

6662 Specialized Cleaners

Specialized Cleaners clean and refurbish building exteriors, carpets, chimneys, industrial equipment, railway cars, ventilation systems, windows and other surfaces, using specialized equipment and techniques. They are employed by specialized cleaning services companies or may be self-employed.

Examples of titles classified in this unit group

Building Exterior Cleaner
Carpet Cleaner
Chimney Cleaner
Freight Car Cleaner
Furnace Cleaner
Laboratory Equipment Cleaner
Sandblaster
Septic Tank Cleaner
Upholstery Cleaner
Vehicle Cleaner
Ventilation System Cleaner
Window Cleaner

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Carpet and upholstery cleaners operate cleaning machines to clean carpets, rugs and upholstered furniture on customer's premises or in carpet and upholstery cleaning establishments.
- Chimney cleaners clean soot and creosote from chimneys and fireplaces using hand tools and industrial vacuum cleaners.
- Furnace and ventilation system cleaners clean ducts, vents and filters of furnaces in residences and commercial buildings using hand tools and industrial vacuum cleaners.
- Sandblasters clean building exteriors, tanks, chimneys and industrial equipment using sandblasting, pressurized steam or hydroblasting equipment.
- Vehicle cleaners clean the interior and exterior of automobiles and trucks at car washes and car dealerships.
- Window cleaners wash and clean interior and exterior windows and other glass surfaces in low-rise and high-rise buildings.

Employment requirements

- There are no specific education requirements for occupations in this unit group.
- On-the-job training is usually provided.
- Previous experience in a related position may be required for some occupations in this unit group.

Additional information

- Progression to supervisory positions is possible with additional training or experience.

Classified elsewhere

- *Cleaning Supervisors* (6215)
- *Janitors, Caretakers and Building Superintendents* (6663)
- *Light Duty Cleaners* (6661)

6663 Janitors, Caretakers and Building Superintendents

Janitors, Caretakers and Building Superintendents clean and maintain the interior and exterior of commercial, institutional and residential buildings and their surrounding grounds. They are employed by office and apartment building management companies, school boards, hospitals, recreational facilities, shopping malls and other establishments.

Examples of titles classified in this unit group

Building Caretaker
Building Superintendent
Custodian
Heavy-Duty Cleaner
Handyman/woman
Industrial Cleaner
Janitor
Plant Cleaner

Main duties

Janitors, Caretakers and Building Superintendents perform some or all of the following duties:

- Sweep, mop, scrub and wax hallways, floors and stairs
- Operate industrial vacuum cleaners to remove scraps, dirt, heavy debris and other refuse
- Empty trash cans and other waste containers
- Wash windows, interior walls and ceilings
- Clear snow and ice from walkways and parking areas
- Cut grass and tend grounds
- Clean and disinfect washrooms and fixtures
- Make adjustments and minor repairs to heating, cooling, ventilating, plumbing and electrical systems
- Perform other routine maintenance jobs and repairs such as painting
- May advertise vacancies, show apartments and offices to prospective tenants and collect rent.

Employment requirements

- Completion of secondary school may be required.
- Some occupations in this unit group, such as building superintendents, require previous cleaning and maintenance experience.

Additional information

- Progression to supervisory positions is possible with additional training or experience.

Classified elsewhere

- *Cleaning Supervisors* (6215)
- *Light Duty Cleaners* (6661)
- *Specialized Cleaners* (6662)

6671 Attendants in Recreation and Sport

This unit group includes attendants in recreational and sport facilities who assist patrons, collect tickets and fees and supervise the use of recreation and sports equipment. They are employed by amusement parks, arenas, billiard parlours, bowling alleys, golf courses, ski centres, tennis clubs and other recreational and sports facilities.

Examples of titles classified in this unit group

Amusement Park Attendant
Athletic Equipment Custodian
Billiard Parlour Attendant
Bingo Hall Attendant
Bowling Alley Attendant
Campground Attendant
Ice Maker, Rink
Recreation Attendant
Recreational Facility Attendant
Ski Lift Attendant
Sport Attendant
Tennis Court Attendant

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Amusement park attendants collect tickets and admit patrons to amusement parks and rides, assist patrons to get on and off rides, and secure and release safety belts and bars.
- Ski lift attendants operate ski lifts to transport skiers up ski hills, assist passengers on and off lifts, and monitor equipment to detect wear and damage.
- Bowling alley attendants assign bowling alleys to patrons, issue score sheets, rent bowling shoes and collect fees.
- Ice makers operate machines to clean, smooth and prepare the ice surfaces of rinks for activities such as skating, hockey and curling.
- Recreational facility attendants schedule the use of golf courses, tennis courts, fitness clubs and other recreational facilities and may collect fees from players and sell or rent sports equipment.

Employment requirements

- Some secondary school education may be required.

Additional information

- In data provided by Statistics Canada, unit groups 6443 and 6671 are combined to form 6670 *Attendants in Amusement, Recreation and Sport*.

Classified elsewhere

- *Other Elemental Service Occupations* (6683)
- *Other Personal Service Occupations* (6484)
- *Program Leaders and Instructors in Recreation and Sport* (5254)
- Amusement ride operators (in 6443 *Amusement Attraction Operators and Other Amusement Occupations*)
- Supervisors of attendants in recreation and sport (in 6216 *Other Service Supervisors*)

6672 Other Attendants in Accommodation and Travel (Except Airline Travel)

This unit group includes workers who carry hotel guests' luggage and escort guests to their rooms, carry travellers' luggage at railway stations and aboard ships, and clean and maintain public areas and passengers' rooms aboard ships and trains. They are employed by hotels, railway companies and water transport companies.

Examples of titles classified in this unit group

Baggage Porter
Bellhop
Doorkeeper, Hotel
Guest Services Attendant, Hotel
Luggage Attendant (Except Airline)
Passenger Attendant, Cruise Line
Passenger Attendant, Ship
Porter
Redcap
Train Service Attendant

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Bellhops carry luggage for hotel guests, escort incoming guests to their rooms, check rooms to ensure they are in order, and offer information regarding features of rooms, services of hotel and points of interest.
- Baggage porters convey travellers' luggage at railway stations by hand or hand truck and arrange for ground transportation.
- Ship attendants serve food and beverages, clean cabins, make beds, wash dishes and carry luggage for passengers aboard ships.
- Train service attendants set and clear tables in dining cars, clean sleeping cars, maintain washroom supplies and assist passengers as required.

Employment requirements

- Some secondary school education may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Pursers and Flight Attendants* (6432)
- *Ticket and Cargo Agents and Related Clerks (Except Airline)* (6434)
- *Tour and Travel Guides* (6441)
- Supervisors of attendants in this unit group (in 6216 *Other Service Supervisors*)

6681 Dry Cleaning and Laundry Occupations

Dry cleaning and laundry machine operators operate machines to dry-clean or launder garments and household articles. Dry cleaning and laundry inspectors and assemblers check finished garments to ensure that they meet required standards for cleaning and pressing, and assemble and bag finished garments. They are employed in dry cleaning and laundry establishments and in the laundries of hotels, hospitals and similar institutions.

Examples of titles classified in this unit group

Assembler, Laundry and Dry Cleaning
Bagger, Laundry and Dry Cleaning
Cleaning Machine Operator
Drapery Cleaner
Dry Cleaner
Dyer, Laundry and Dry Cleaning
Fur Cleaner
Inspector
Laundry Machine Operator
Laundry Worker
Leather Cleaner
Machine Operator, Laundry and Dry Cleaning
Suede Cleaner
Spotter
Sprayer, Leather or Suede

Main duties

Dry cleaning and laundry machine operators perform some or all of the following duties:

- Operate dry cleaning machines to dry-clean dresses, suits, coats, sweaters, draperies, cushion covers and other garments and household articles
- Operate washing machines and dryers to clean shirts, sheets, blankets, towels and other garments and household articles
- Operate machines to clean, blow-dry and glaze fur garments
- Operate machines to dry-clean, dye, spray, re-oil, press and re-buff suede and leather garments.

Dry cleaning and laundry inspectors and assemblers perform some or all of the following duties:

- Check finished garments to ensure that they are properly cleaned, dried and pressed
- Record damaged or improperly cleaned or laundered garments
- Use hand-held steam iron to touch up rough finishes
- Assemble and bag finished garments and household articles
- Match invoices with garment tags or garments.

Employment requirements

- Some secondary school education is required.
- Three to six months of on-the-job training are usually provided.
- Dry cleaners in British Columbia may require completion of a one-year apprenticeship program.
- Dry cleaning and laundry machine operators may require experience as inspectors or assemblers.
- Suede, leather and fur cleaners may require experience as dry cleaning or laundry machine operators.

Additional information

- Progression to supervisory dry cleaning and laundry occupations is possible with additional training and experience.

Classified elsewhere

- *Dry Cleaning and Laundry Supervisors* (6214)
- *Ironing, Pressing and Finishing Occupations* (6682)
- Alterers (in 7342 *Tailors, Dressmakers, Furriers and Milliners*)
- Dry cleaning service managers (in 0651 *Other Services Managers*)

6682 Ironing, Pressing and Finishing Occupations

This unit group includes workers who press garments and household articles using either a hand iron or a pressing machine. They are employed by dry cleaning and laundry establishments and by laundries in hotels, hospitals and similar institutions.

Examples of titles classified in this unit group

Finisher
Laundry Finisher
Pleats Finisher
Presser
Silk Finisher
Steam Finisher

Main duties

Workers in this unit group perform some or all of the following duties:

- Operate pressing machines to press garments such as pants, shirts and skirts, and household articles such as sheets and cushion covers
- Fold and bag shirts and sheets
- Hand iron fine lace or silk garments.

Employment requirements

- Some secondary school education is required.
- On-the-job training is provided.

Additional information

- Progression to supervisory dry cleaning and laundry positions is possible with additional training or experience.

Classified elsewhere

- *Dry Cleaning and Laundry Occupations* (6681)
- *Dry Cleaning and Laundry Supervisors* (6214)

6683 Other Elemental Service Occupations

This unit group includes elemental occupations, not elsewhere classified, primarily concerned with the provision of services. They are employed by a wide range of retail service establishments.

Examples of titles classified in this unit group

Beauty Salon Attendant
Car Jockey
Cloakroom Attendant
Door Attendant
Elevator Operator
Funeral Attendant
Fur Storage Attendant
Hotel Valet
Laundromat Attendant
Parking Lot Attendant
Shoe Shiner
Tanning Salon Attendant
Ticket Taker
Toll Booth Attendant
Usher

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Beauty salon attendants wash, condition and dry customers' hair, assist hairdressers and keep work areas clean.
- Door attendants assist persons entering or leaving hotels, theatres and similar establishments.
- Funeral attendants drive hearses, arrange lights and floral displays, escort mourners, act as pallbearers and clean funeral parlours and chapels.
- Laundromat attendants replenish vending machines, provide change, explain operation of machines to customers, clean the laundromat and arrange for the repair of broken machines.
- Parking lot attendants and car jockeys collect parking fees, issue ticket stubs, direct customers to parking spaces and park cars.
- Ticket takers and ushers collect admission tickets or passes from patrons at entertainment events and direct patrons to their seats.

Employment requirements

- There are no specific education requirements for occupations in this unit group.
- A valid driver's licence is required for some occupations in this unit group, such as funeral attendants and car jockeys.

Classified elsewhere

- *Attendants in Recreation and Sport* (6671)

TRADES, TRANSPORT AND EQUIPMENT OPERATORS AND RELATED OCCUPATIONS

Major Group 72-73
TRADES AND SKILLED TRANSPORT AND EQUIPMENT OPERATORS

721 Contractors and Supervisors, Trades and Related Workers

7211 Supervisors, Machinists and Related Occupations
7212 Contractors and Supervisors, Electrical Trades and Telecommunications Occupations
7213 Contractors and Supervisors, Pipefitting Trades
7214 Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades
7215 Contractors and Supervisors, Carpentry Trades
7216 Contractors and Supervisors, Mechanic Trades
7217 Contractors and Supervisors, Heavy Construction Equipment Crews
7218 Supervisors, Printing and Related Occupations
7219 Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers

722 Supervisors, Railway and Motor Transportation Occupations

7221 Supervisors, Railway Transport Operations
7222 Supervisors, Motor Transport and Other Ground Transit Operators

723 Machinists and Related Occupations

7231 Machinists and Machining and Tooling Inspectors
7232 Tool and Die Makers

724 Electrical Trades and Telecommunication Occupations

7241 Electricians (Except Industrial and Power System)
7242 Industrial Electricians
7243 Power System Electricians
7244 Electrical Power Line and Cable Workers
7245 Telecommunications Line and Cable Workers
7246 Telecommunications Installation and Repair Workers
7247 Cable Television Service and Maintenance Technicians

725 Plumbers, Pipefitters and Gas Fitters

7251 Plumbers
7252 Steamfitters, Pipefitters and Sprinkler System Installers
7253 Gas Fitters

726 Metal Forming, Shaping and Erecting Occupations[13]

7261 Sheet Metal Workers
7262 Boilermakers
7263 Structural Metal and Platework Fabricators and Fitters
7264 Ironworkers
7265 Welders
7266 Blacksmiths and Die Setters

[13] In data provided by Statistics Canada, unit groups 7265 and 9515 are combined to form *9510 Welders and Soldering Machine Operators*. Hence, data for major group 72 and for minor group 726 does not include unit group 7265.

727 Carpenters and Cabinetmakers

7271 Carpenters
7272 Cabinetmakers

728 Masonry and Plastering Trades

7281 Bricklayers
7282 Cement Finishers
7283 Tilesetters
7284 Plasterers, Drywall Installers and Finishers and Lathers

729 Other Construction Trades

7291 Roofers and Shinglers
7292 Glaziers
7293 Insulators
7294 Painters and Decorators
7295 Floor Covering Installers

731 Machinery and Transportation Equipment Mechanics (Except Motor Vehicle)

7311 Construction Millwrights and Industrial Mechanics (Except Textile)
7312 Heavy-Duty Equipment Mechanics
7313 Refrigeration and Air Conditioning Mechanics
7314 Railway Carmen/women
7315 Aircraft Mechanics and Aircraft Inspectors
7316 Machine Fitters
7317 Textile Machinery Mechanics and Repairers
7318 Elevator Constructors and Mechanics

732 Motor Vehicle Mechanics

7321 Motor Vehicle Mechanics, Technicians and Mechanical Repairers
7322 Motor Vehicle Body Repairers

733 Other Mechanics

7331 Oil and Solid Fuel Heating Mechanics
7332 Electric Appliance Servicers and Repairers
7333 Electrical Mechanics
7334 Motorcycle and Other Related Mechanics
7335 Other Small Engine and Equipment Mechanics

734 Upholsterers, Tailors, Shoe Repairers, Jewellers and Related Occupations

7341 Upholsterers
7342 Tailors, Dressmakers, Furriers and Milliners
7343 Shoe Repairers and Shoemakers
7344 Jewellers, Watch Repairers and Related Occupations

735 Stationary Engineers and Power Station and System Operators

7351 Stationary Engineers and Auxiliary Equipment Operators
7352 Power Systems and Power Station Operators

736 Train Crew Operating Occupations

7361 Railway and Yard Locomotive Engineers
7362 Railway Conductors and Brakemen/women

737 Crane Operators, Drillers and Blasters

7371 Crane Operators
7372 Drillers and Blasters - Surface Mining, Quarrying and Construction
7373 Water Well Drillers

738 Printing Press Operators, Commercial Divers and Other Trades and Related Occupations, n.e.c.

7381 Printing Press Operators
7382 Commercial Divers
7383 Other Trades and Related Occupations

Major Group 74
INTERMEDIATE OCCUPATIONS IN TRANSPORT, EQUIPMENT OPERATION, INSTALLATION AND MAINTENANCE

741 Motor Vehicle and Transit Drivers

7411 Truck Drivers
7412 Bus Drivers and Subway and Other Transit Operators
7413 Taxi and Limousine Drivers and Chauffeurs
7414 Delivery Drivers

742 Heavy Equipment Operators

7421 Heavy Equipment Operators (Except Crane)
7422 Public Works Maintenance Equipment Operators

743 Other Transport Equipment Operators and Related Workers

7431 Railway Yard Workers
7432 Railway Track Maintenance Workers
7433 Deck Crew, Water Transport
7434 Engine Room Crew, Water Transport
7435 Lock and Cable Ferry Operators and Related Occupations
7436 Boat Operators
7437 Air Transport Ramp Attendants

744 Other Installers, Repairers and Servicers

7441 Residential and Commercial Installers and Servicers
7442 Waterworks and Gas Maintenance Workers
7443 Automotive Mechanical Installers and Servicers
7444 Pest Controllers and Fumigators
7445 Other Repairers and Servicers

745 Longshore Workers and Material Handlers

7451 Longshore Workers
7452 Material Handlers

Major Group 76
TRADES HELPERS, CONSTRUCTION LABOURERS AND RELATED OCCUPATIONS

761 Trades Helpers and Labourers

7611 Construction Trades Helpers and Labourers
7612 Other Trades Helpers and Labourers

762 Public Works and Other Labourers, n.e.c.

7621 Public Works and Maintenance Labourers
7622 Railway and Motor Transport Labourers

7211 Supervisors, Machinists and Related Occupations

Supervisors in this unit group supervise and co-ordinate the activities of workers classified in the following unit groups: *Machinists and Machining and Tooling Inspectors* (7231) and *Tool and Die Makers* (7232). They are employed by metal products manufacturing companies and machine shops.

Examples of titles classified in this unit group

Foreman/woman, Automotive Machine Shop
Foreman/woman, Machinists
Foreman/woman, Maintenance Machine Shop
Foreman/woman, Tool and Die Makers
Supervisor, Machine Shop
Supervisor, Machinists
Supervisor, Metal Mould and Patternmakers
Supervisor, Tool and Die Makers

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who machine metal into parts, products, tools and dies or moulds with precise dimensions
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Requisition materials and supplies
- Resolve work problems and recommend work measures to improve productivity
- Train or arrange for training of workers
- Recommend personnel actions such as hiring and promotions
- Ensure standards for safe working conditions are observed
- Prepare production and other reports
- Set up machines and equipment
- May also supervise, co-ordinate and schedule the activities of related apprentices, helpers and labourers.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as a qualified machinist or tool and die maker are required.
- Trade certification in machining or tool and die making is required.

7212 Contractors and Supervisors, Electrical Trades and Telecommunications Occupations

This unit group includes telecommunications and electrical trade contractors who own and operate their own businesses. This group also includes supervisors who supervise and co-ordinate the activities of workers classified in the following unit groups: *Electricians* (7241), *Industrial Electricians* (7242), *Power System Electricians* (7243), *Electrical Power Line and Cable Workers* (7244), *Telecommunications Line and Cable Workers* (7245), *Telecommunications Installation and Repair Workers* (7246) and *Cable Television Service and Maintenance Technicians* (7247). They are employed in a wide range of establishments; places of employment are indicated in the unit group descriptions.

Examples of titles classified in this unit group

Electrical Contractor
Foreman/woman, Cablevision Technicians
Foreman/woman, Construction Electricians
Foreman/woman, Industrial Electricians
Foreman/woman, Power Line and Cable Workers
Foreman/woman, Power System Electricians
Foreman/woman, Telecommunications Installation and Repair Workers
Supervisor, Cable Maintenance and Repair
Supervisor, Plant Electricians
Supervisor, Residential Electricians

Main duties

Contractors and supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who install, repair and maintain electrical wiring, fixtures and control devices, power systems, telecommunication systems and cablevision systems
- Establish methods to meet work schedules and co-ordinate work activities with other subcontractors or departments
- Requisition materials and supplies
- Resolve work problems and recommend work measures to improve productivity
- Train or arrange for training of workers
- Recommend personnel actions such as hirings and promotions
- Ensure standards for safe working conditions are observed
- Prepare work progress reports
- May manage the operations of own company
- May also supervise, co-ordinate and schedule the activities of related apprentices, helpers and labourers.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as a qualified tradesperson in a relevant trade are required.
- Journeyman/woman trade certification in a relevant trade is required.

Additional information

- There is some mobility between jobs within a specific trade; however, there is little or no intertrade mobility.

7213 Contractors and Supervisors, Pipefitting Trades

This unit group includes plumbing and other pipefitting trade contractors who own and operate their own businesses. This group also includes supervisors who supervise and co-ordinate the activities of workers classified in the following unit groups: *Plumbers* (7251), *Steamfitters, Pipefitters and Sprinkler System Installers* (7252) and *Gas Fitters* (7253). They are employed by construction companies, plumbing and pipefitting trade contactors and maintenance departments of industrial, commercial and manufacturing establishments.

Examples of titles classified in this unit group

Contractor, Pipefitting
Contractor, Plumbing
Foreman/woman, Gas Fitters
Foreman/woman, Pipefitters
Foreman/woman, Plumbers
Foreman/woman, Sprinkler System Installers
Foreman/woman, Steamfitters
Supervisor, Gas Fitters
Supervisor, Plumbers
Supervisor, Steamfitters

Main duties

Contractors and supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who install, repair and maintain piping systems used for the transmission of steam, heat, water, oil and other liquids and gases in residential, commercial, industrial and other installations
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Requisition materials and supplies
- Resolve work problems and recommend measures to improve productivity
- Train or arrange for training of workers
- Recommend personnel actions such as hirings and promotions
- Ensure standards for safe working conditions are observed
- Prepare schedules and other reports
- May manage the operations of own company
- May supervise, co-ordinate and schedule the activities of related apprentices, helpers and labourers.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as a qualified tradesperson in a relevant trade are required.
- Journeyman/woman trade certification in a relevant trade is required.

Additional information

- There is little or no intertrade mobility among supervisors in this unit group.

7214 Contractors and Supervisors, Metal Forming, Shaping and Erecting Occupations

This unit group includes sheet metal, ironwork, welding and boilermaking trade contractors who own and operate their own businesses. This group also includes supervisors who supervise and co-ordinate the activities of workers classified in the following unit groups: *Sheet Metal Workers* (7261), *Boilermakers* (7262), *Structural Metal and Platework Fabricators and Fitters* (7263), *Ironworkers* (7264), *Skilled Welders* (7265) and *Blacksmiths and Die Setters* (7266). They are employed by structural, platework and related metal products fabrication, manufacturing and erecting companies.

Examples of titles classified in this unit group

Contractor, Ironwork
Foreman/woman, Blacksmiths
Foreman/woman, Boilermakers
Foreman/woman, Ironworkers
Supervisor, Boilermakers
Supervisor, Sheet Metal Workers
Supervisor, Structural Metal Fitters
Supervisor, Welders

Main duties

Contractors and supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who shape, form and join metal parts or products to specified dimensions and erect light and heavy metal products and structures
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Requisition materials and supplies
- Resolve work problems and recommend work measures to improve productivity
- Train or arrange for training of workers
- Recommend personnel actions such as hirings and promotions
- Ensure standards for safe working conditions are observed
- Prepare production and other reports
- Set up machines and equipment
- May manage the operations of own company
- May also supervise, co-ordinate and schedule the activities of apprentices, machine operators, helpers and labourers.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as a qualified tradesperson in a relevant trade are required.
- Journeyman/woman trade certification in a relevant trade is required.

Additional information

- There is little or no intertrade mobility among the supervisors in this unit group.

7215 Contractors and Supervisors, Carpentry Trades

This unit group includes carpentry trade contractors who own and operate their own businesses. This group also includes supervisors who supervise and co-ordinate the activities of carpenters. They are employed by construction companies and carpentry contractors.

Examples of titles classified in this unit group

Carpenter Supervisor
Carpentry Contractor
Foreman/woman, Finish Carpenters
Foreman/woman, Framers
Foreman/woman, Form Builders
Foreman/woman, Maintenance Carpenters
Supervisor, Carpenters

Main duties

Contractors and supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of carpenters who construct, renovate and maintain structures of wood and other building materials and build and install interior finishing in residential, commercial and industrial buildings
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Requisition materials and supplies
- Resolve work problems and recommend work measures to improve productivity
- Train or arrange for training of workers
- Recommend personnel actions such as hirings and promotions
- Ensure standards for safe working conditions are observed
- Prepare schedules and other reports
- May manage the operations of own company
- May also supervise, co-ordinate and schedule the activities of related apprentices, helpers and labourers.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as a qualified carpenter are usually required.
- Journeyman/woman trade certification as a carpenter is usually required.

Classified elsewhere

- *Construction Managers* (0711)
- *Residential Home Builders and Renovators* (0712)
- Supervisors of cabinetmakers (in 9224 *Supervisors, Furniture and Fixtures Manufacturing*)

7216 Contractors and Supervisors, Mechanic Trades

This unit group includes heating, refrigeration, air-conditioning, millwrighting and elevator installation trade contractors who own and operate their own businesses. This group also includes supervisors who supervise and co-ordinate the activities of workers classified in unit groups within the following minor groups: *Machinery and Transportation Equipment Mechanics (except Motor Vehicle)* (731), *Motor Vehicle Mechanics* (732) and *Other Mechanics* (733). They are employed in a wide range of establishments; places of employment are indicated in the unit group descriptions.

Examples of titles classified in this unit group

Contractor, Heating Systems
Foreman/woman, Air Conditioning and Refrigeration Mechanics
Foreman/woman, Aircraft Mechanics and Inspectors
Foreman/woman, Electrical Mechanics
Foreman/woman, Heating Systems Mechanics
Foreman/woman, Heavy-Duty Equipment Mechanics
Foreman/woman, Printing Machine Repairers
Foreman/woman, Railway Car Repairers
Foreman/woman, Railway Equipment Maintenance Inspectors
Foreman/woman, Textile Mechanics
Supervisor, Aircraft Maintenance Mechanics
Supervisor, Appliance Repair Shop
Supervisor, Industrial Mechanics
Supervisor, Motor Vehicle Repair Shop
Supervisor, Small Engine Repair Shop

Main duties

Contractors and supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who repair and maintain aircraft, railway locomotives and cars, industrial machinery and equipment, construction and other heavy equipment, textile equipment, printing machines, heating equipment and furnaces, transformers and other electrical equipment, motor vehicles, air-conditioning and refrigeration equipment, electric appliances and other equipment, such as motorcycles, outboard motors and snowmobiles
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Requisition materials and supplies
- Resolve work problems and recommend work measures to improve productivity
- Train or arrange for training of workers
- Recommend personnel actions such as hiring and promotions
- Ensure that standards for safe working conditions are observed
- Prepare production and other reports
- May manage the operations of own company
- May also supervise, co-ordinate and schedule the activities of related apprentices, helpers and labourers.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as a qualified tradesperson in a relevant trade are usually required.
- Provincial trade certification in a relevant trade is required.

Additional information

- There is little or no intertrade job mobility among the supervisors classified in this unit group.

7217 Contractors and Supervisors, Heavy Construction Equipment Crews

This unit group includes excavating, grading, paving, drilling and blasting contractors who own and operate their own business. This unit group also includes supervisors who supervise and co-ordinate the activities of workers classified in the following unit groups: *Crane Operators* (7371), *Drillers and Blasters – Surface Mining, Quarrying and Construction* (7372), *Heavy Equipment Operators (Except Crane)* (7421), *Longshore Workers* (7451), *Public Works Maintenance Equipment Operators* (7422), *Railway Track Maintenance Workers* (7432) and *Water Well Drillers* (7373). They are employed in a wide range of establishments; places of employment are indicated in the unit group descriptions.

Examples of titles classified in this unit group

Excavating Contractor
Foreman/woman, Demolition
Foreman/woman, Drilling and Blasting – Construction
Foreman/woman, Logging Road Construction
Foreman/woman, Railway Gang
Foreman/woman, Railway Track Maintenance
Paving Contractor
Pipeline Construction Supervisor
Road Maintenance Foreman/woman
Section Foreman/woman, Railway
Supervisor, Heavy Equipment Operators
Supervisor, Oilfield Construction
Supervisor, Water Well Drilling
Track Foreman/woman, Railway

Main duties

Contractors and supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who operate cranes and construction, paving, drilling, railway maintenance and other similar heavy equipment
- Establish methods to meet work schedules and co-ordinate work activities with other project supervisors or managers
- Requisition materials and supplies
- Resolve work problems and recommend measures to improve productivity
- Train or arrange for training of workers
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports
- May manage the operations of own company
- May also supervise, co-ordinate and schedule the activities of related apprentices, helpers and labourers.

Employment requirements

- Completion of secondary school may be required.
- Several years of experience in the occupation supervised is required.
- Provincial trade certification in a relevant trade may be required.

Additional information

- There is some mobility between occupations classified in this unit group.

Classified elsewhere

- Supervisors of heavy equipment mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*)
- Supervisors of logging machinery operators (in 8211 *Supervisors, Logging and Forestry*)

7218 Supervisors, Printing and Related Occupations

Supervisors in this unit group supervise and co-ordinate the activities of workers who produce camerawork and printing plates and cylinders; process film; print text and illustrations on paper, metal and other material; and bind and finish printed products. They are employed by companies that specialize in commercial printing or one of its components, such as binding or colour reproduction; in combined printing and publishing companies, such as newspapers and magazines; and in various establishments in both the public and private sectors that have in-house printing departments.

Examples of titles classified in this unit group

Bindery Supervisor – Printing
Bindery Foreman/woman – Printing
Composing Room Supervisor – Printing
Film Processing Supervisor
Finishing Supervisor – Printing
Foreman/woman, Photographic and Film Processing
Platemaking Supervisor – Printing
Preparatory Supervisor – Printing
Pre-press Supervisor – Printing
Pressroom Supervisor – Printing
Printing Supervisor

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule activities of workers who produce camerawork, printing plates and cylinders; process film; and print, bind and finish books, newspapers, business forms and other printed products
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Review and approve all job proofs or samples in order to ensure quality of work meets client specifications
- Requisition materials and supplies
- Resolve work problems, provide technical advice and recommend measures to improve productivity and product quality
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hiring and promotions
- Prepare production and other reports
- May set up machines or equipment.

Employment requirements

- Completion of secondary school is required.
- Completion of a college program in graphic arts technology may be required.
- Several years of experience in the work area supervised is usually required.
- Provincial trade certification may be required for some occupations in this unit group.

Additional information

- Progression to management positions, such as department, production or plant manager, is possible with experience.

Classified elsewhere

- Supervisors of typesetters (in 1211 *Supervisors, General Office and Administrative Support Clerks*)
- Printing plant, department and production managers (in 0911 *Manufacturing Managers*)

7219 Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers

This unit group includes roofing, masonry, painting and other construction trade contractors, not elsewhere classified, who own and operate their own business. Supervisors in this unit group supervise and co-ordinate the activities of various tradespersons, installers, repairers and servicers classified in the following minor groups: *Masonry and Plastering Trades* (728), *Other Construction Trades* (729), and *Other Installers, Repairers and Servicers* (744). They are employed by a wide range of establishments; places of employment are indicated in the unit group descriptions. This unit group also includes prefabricated product installation and service contractors and proprietors of some repair and service establishments.

Examples of titles classified in this unit group

Bricklaying Contractor
Cement Finishing Contractor
Foreman/woman, Glaziers
Foreman/woman, Insulators
Foreman/woman, Plasterers
Painting Contractor
Pest Control Supervisor
Roofing Contractor
Supervisor, Bicycle Repair Shop
Supervisor, Painters and Decorators
Supervisor, Tilesetters

Main duties

Contractors and supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of construction workers engaged in bricklaying, roofing, cement finishing, tilesetting, plastering, drywall installation, glazing, insulating and painting, and workers who install and service prefabricated products in residential and commercial properties, as well as workers who repair a wide variety of products, such as musical instruments, sports equipment, vending machines, bicycles and cameras
- Establish methods to meet work schedules and co-ordinate work activities with other subcontractors
- Resolve work problems and recommend measures to improve productivity and product quality
- Requisition materials and supplies
- Train workers in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare work progress reports
- May manage the operations of own company
- May also supervise, co-ordinate and schedule the activities of related apprentices, helpers and labourers.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience in the trade or in the work area supervised are usually required.
- Provincial trade certification may be required for some occupations in this unit group.

Additional information

- There is little or no mobility among supervisors in this unit group.

Classified elsewhere

- *Contractors and Supervisors, Carpentry Trades* (7215)
- *Contractors and Supervisors, Pipefitting Trades* (7213)
- Electrical contractors and supervisors of electricians (in 7212 *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations*)
- Ironwork contractors and supervisors of ironworkers (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades*)

7221 Supervisors, Railway Transport Operations

Supervisors in this unit group supervise and co-ordinate the activities of railway and yard locomotive engineers, railway yard workers and railway labourers. They are employed by railway transport companies.

Examples of titles classified in this unit group

Railway Transport Operations Supervisor
Road Foreman/woman, Freight Train
Stationmaster
Trainmaster
Yard Foreman/woman, Railway
Yardmaster, Railway

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who operate trains, drive locomotives in railway yards and perform other duties related to railway operations
- Establish methods to meet work schedules and co-ordinate work activities with other units
- Resolve work problems and recommend measures to improve performance
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policy
- Recommend personnel actions such as hirings and promotions
- Prepare work reports.

Employment requirements

- Completion of secondary school is usually required.
- Level "A" Certificate of the Canadian Rail Operating Rules is required.
- Certificate of the "Qualification Standards for Operating Crews" is required.
- Several years of railway operations experience are required.

Classified elsewhere

- Supervisors of locomotive mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*)
- Supervisors of railway track maintenance crews (in 7217 *Contractors and Supervisors, Heavy Construction Equipment Crews*)

7222 Supervisors, Motor Transport and Other Ground Transit Operators

Supervisors in this unit group supervise and co-ordinate activities of truck drivers, bus drivers, delivery drivers, subway and other transit operators, chauffeurs and taxi and limousine drivers. This unit group also includes bus dispatchers who co-ordinate the activities of transit system bus drivers and subway traffic controllers who operate and monitor signal and track switch control panels. They are employed by motor transportation and ground transit companies and by government departments.

Examples of titles classified in this unit group

Bus Inspector
Dispatcher, Bus
Foreman/woman, Truck Drivers
Foreman/woman, Urban Transit System
Mobile Inspector, Transit
Supervisor, School Bus Drivers
Subway Traffic Controller
Supervisor, Light Rail Transit Operators
Supervisor, Subway Operators

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who operate trucks, busses, subway trains, light rail transit, taxicabs and other transport vehicles
- Establish methods to meet work schedules and may co-ordinate work activities with other units
- Resolve work problems and recommend measures to improve performance
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Dispatch bus drivers and monitor routes to ensure schedules are met and to resolve operating problems
- Monitor and operate signal and track switch control panel of subway systems
- Prepare work reports.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as a driver or operator of motor transport or ground transit equipment are usually required.

Additional information

- There is little mobility between occupations in the different transportation sectors of this unit group.

Classified elsewhere

- *Supervisors, Railway Transport Operations* (7221)
- Train dispatchers (in 2275 *Railway and Marine Traffic Controllers*)
- Truck transport and taxi dispatchers (in 1475 *Dispatchers and Radio Operators*)

7231 Machinists and Machining and Tooling Inspectors

Machinists set up and operate a variety of machine tools to cut or grind metal and similar materials into parts or products with precise dimensions. Machining and tooling inspectors inspect machined parts and tooling in order to maintain quality control standards. They are employed by machinery, equipment, motor vehicle, automotive parts, aircraft and other metal products manufacturing companies and by machine shops. Machinist apprentices are included in this unit group.

Examples of titles classified in this unit group

Automotive Machinist
General Machinist
Machined Parts Inspector
Machine Shop Inspector
Machine Tool Set-up Operator
Machining Inspector
Machinist
Machinist Apprentice
Maintenance Machinist
Tooling Inspector

Main duties

Machinists perform some or all of the following duties:

- Read and interpret blueprints, charts and tables or study sample parts to determine machining operation to be performed
- Compute dimensions and tolerances and measure and lay out work pieces
- Set up and operate a variety of machine tools including computer numerically controlled tools to perform precision machining operations such as turning, milling, boring, planing, drilling, precision grinding and other operations
- Fit and assemble machined metal parts and subassemblies using hand and power tools
- Verify dimensions of products for accuracy and conformance to specifications using precision measuring instruments
- Adjust and set up machine tools for use by machining tool operators.

Machining and tooling inspectors perform some or all of the following duties:

- Verify dimensions of machined parts or tooling using micrometers, verniers, callipers, height gauges, optical comparators or other specialized measuring instruments
- Maintain, repair and calibrate precision measuring instruments such as dial indicators, fixed gauges, height gauges and other measuring devices
- Report deviations from specifications and tolerances to supervisor
- Maintain inspection records and complete inspection reports.

Employment requirements

- Some secondary school education is required.
- Completion of a four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some college or industry courses in machining is usually required to be eligible for trade certification.
- Trade certification is available, but not compulsory, in all provinces and territories except Quebec.
- Interprovincial trade certification (Red Seal) is also available to qualified machinists.
- Several years of experience as a machinist, tool and die maker or machining tool operator may be required for machining and tooling inspectors.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal certification allows for interprovincial mobility.

Classified elsewhere

- *Machining Tool Operators* (9511)
- *Tool and Die Makers* (7232)
- *Woodworking Machine Operators* (9513)
- Supervisors of machinists and machining and tooling inspectors (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades)*

7232 Tool and Die Makers

Tool and Die Makers make, repair and modify custom-made, prototype or special tools, dies, jigs, fixtures and gauges which require precise dimensions. They are employed primarily in manufacturing industries and in tool and die, mould making and machine shops. Tool and die maker apprentices are included in this unit group. This unit group also includes patternmakers and metal mould makers.

Examples of titles classified in this unit group

Die Finisher
Die Maker
Jig Maker
Metal Mould Maker
Metal Patternmaker
Mould Maker – Plastics Processing
Tool and Die Maker
Tool and Die Maker Apprentice
Tool Maker

Main duties

Workers in this unit group perform some or all of the following duties:

- Read and interpret drawings and specifications of tools, dies, prototypes or models
- Compute dimensions and tolerances and set up machine tools
- Position, secure, measure and work metal stock or castings to lay out for machining
- Operate a variety of machine tools to cut, turn, mill, plane, bore, grind or otherwise shape workpiece to prescribed dimensions and finish
- Verify machined parts for conformance to specifications using precision measuring instruments
- Fit and assemble parts using hand tools
- Machine, fit and assemble casting and other parts to make metal patterns, core boxes and match plates
- Machine, fit and assemble parts to make metal moulds for plastic injection moulding or other production processes
- Inspect and test completed tools, dies, jigs or fixtures for proper operation.

Employment requirements

- Some secondary school education is required.
- Completion of a four-year tool and die making apprenticeship program
  or
  A combination of over five years of work experience in the trade and some high school, college or industry courses in tool and die making is usually required to be eligible for trade certification.
- Tool and die making trade certification is available, but not compulsory, in Nova Scotia, Ontario, Manitoba and Alberta.
- Interprovincial trade certification (Red Seal) is also available to qualified tool and die makers.
- Mould makers may require completion of an apprenticeship or a college program in mould making.
- Patternmakers may require completion of an apprenticeship or a college program in patternmaking.
- Mould making and patternmaking trade certification is available, but not compulsory, in Ontario.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Machinists and Machining and Tooling Inspectors* (7231)
- Supervisors of tool and die makers (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades*)

7241 Electricians (Except Industrial and Power System)

Electricians in this unit group lay out, assemble, install, test, troubleshoot and repair electrical wiring, fixtures, control devices and related equipment in buildings and other structures. They are employed by electrical contractors and maintenance departments of buildings and other establishments or they may be self-employed. Electrician apprentices are included in this unit group.

Examples of titles classified in this unit group

Apprentice Electrician
Construction Electrician
Electrician

Main duties

Electricians in this unit group perform some or all of the following duties:

- Read and interpret drawings and electrical code specifications to determine wiring layouts for new or existing installations
- Pull wire through conduits and through holes in walls and floors
- Install, replace and repair lighting fixtures and electrical control and distribution equipment, such as switches, relays and circuit breaker panels
- Splice, join and connect wire to fixtures and components to form circuits
- Test continuity of circuits using test equipment to ensure compatibility and safety of system, following installation, replacement or repair
- Troubleshoot and isolate faults in electrical and electronic systems and remove and replace faulty components
- Connect electrical power to sound and visual communication equipment, signalling devices and heating and cooling systems
- Conduct preventive maintenance programs and keep maintenance records.

Employment requirements

- Some secondary school education is required.
- Completion of a four to five-year apprenticeship program is usually required.
- Trade certification is compulsory in Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta and available, but voluntary, in Newfoundland, British Columbia, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified electricians.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Electrical Mechanics* (7333)
- *Industrial Electricians* (7242)
- *Power System Electricians* (7243)
- Supervisors of electricians (in 7212 *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations*)

7242 Industrial Electricians

Industrial Electricians install, maintain, test, troubleshoot and repair industrial electrical equipment and associated electrical and electronic controls. They are employed by electrical contractors and maintenance departments of factories, plants, mines, shipyards and other industrial establishments. Industrial electrician apprentices are included in this unit group.

Examples of titles classified in this unit group

Electrician, Shipyard
Industrial Electrician
Marine Electrician
Mill Electrician
Mine Electrician
Plant Electrician
Plant Maintenance Electrician

Main duties

Industrial Electricians perform some or all of the following duties:

- Read and interpret drawings and electrical code specifications to determine layout of industrial electrical equipment installations
- Install, examine, replace or repair electrical wiring, receptacles, switch boxes, conduits, feeders, cable assemblies, lighting fixtures and other electrical components
- Test electrical and electronic equipment and components for continuity, current, voltage and resistance
- Maintain, repair, install and test switchgears, transformers, switchboard meters, regulators and reactors
- Maintain, repair, test and install electrical motors, generators, industrial storage batteries and hydraulic and pneumatic electrical control systems
- Troubleshoot, maintain and repair industrial electrical and electronic control systems and devices
- Conduct preventive maintenance programs and keep maintenance records.

Employment requirements

- Some secondary school education is required.
- Completion of a four-year industrial electrician apprenticeship program
  or
  A combination of over five years of work experience in the trade and some high school, college or industry courses in industrial electrical equipment is usually required to be eligible for trade certification.
- Trade certification is compulsory in Prince Edward Island and available, but voluntary, in Newfoundland, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified industrial electricians.
- Marine electricians in New Brunswick may require completion of a marine electrician apprenticeship program.
- Mine electricians in Nova Scotia may require completion of a mine electrician apprenticeship program.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Power System Electricians* (7243)
- Construction electricians (in 7241 *Electricians (Except Industrial and Power System)*)
- Supervisors of industrial electricians (in 7212 *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations*)

7243 Power System Electricians

Power System Electricians install, maintain, test and repair electrical power distribution system equipment and apparatus. They are employed by electric power generation, transmission and distribution companies. Power system electrician apprentices are included in this unit group.

Examples of titles classified in this unit group

Apprentice Power System Electrician
Power Electrician
Power Station Electrician
Power System Electrician

Main duties

Power System Electricians perform some or all of the following duties:

- Install and maintain transformers, generators, voltage regulators and other electrical power distribution equipment
- Install and maintain electrical equipment and apparatus in generating stations or powerhouses
- Inspect and test installed electrical equipment and apparatus to locate electrical faults and check their operation, using volt meters, ammeters and other electrical test instruments and equipment
- Repair or replace faulty electrical equipment and apparatus
- Complete test and maintenance reports.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a four-year apprenticeship program for power system electricians
  or
  A combination of up to four years of work experience in the trade and some college or industry courses in electrical technology is usually required.
- Trade certification is available, but not mandatory, in Manitoba and Alberta.

Classified elsewhere

- *Electrical Mechanics* (7333)
- *Electricians* (*Except Industrial and Power System*) (7241)
- *Industrial Electricians* (7242)
- Supervisors of power system electricians (in 7212 *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations*)

7244 Electrical Power Line and Cable Workers

Electrical Power Line and Cable Workers construct, maintain and repair overhead and underground electrical power transmission and distribution systems. They are employed by electric power generation, transmission and distribution companies, electrical contractors and public utility commissions. Electrical power line and cable apprentices are included in this unit group.

Examples of titles classified in this unit group

Apprentice Lineman/woman, Electrical Power Line
Cable Installer, Electrical Power
Cable Splicer, Electrical Power
Construction Lineman/woman, Electrical Power Line
Power Line Patroller
Power Lineman/woman

Main duties

Electrical Power Line and Cable Workers perform some or all of the following duties:

- Install, maintain and repair electrical distribution and transmission systems including overhead and underground power lines and cables, insulators, conductors, lightning arrestors, switches, transformers and other associated equipment
- Erect and maintain steel, wood or concrete poles, towers and guy wires
- Splice, solder and insulate conductors and related wiring to connect power distribution and transmission networks using splicing tools, related electrical equipment and tools
- Inspect and test overhead and underground power line and cables and auxiliary equipment using electrical test equipment
- Climb ladders or operate hydraulic buckets when working aloft on poles and towers, or work in confined spaces such as trenches and tunnels to install power lines and cables and associated equipment
- Install and maintain street lighting systems
- Adhere to safety practices and procedures
- Communicate with other workers to co-ordinate the preparation and completion of work assignments.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a provincial four-year lineman/woman apprenticeship program
  or
  A combination of up to four years of work experience in the trade and some high school, college or industry courses in electrical technology is usually required for electrical power line and cable workers.
- Trade certification is available but not mandatory, in Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, Ontario, Saskatchewan, Alberta, British Columbia, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is available for qualified linemen/women.

Additional information

- Red Seal certification allows for interprovincial mobility.

Classified elsewhere

- *Power System Electricians* (7243)
- Other linemen/women and cable installers (in 7245 *Telecommunications Line and Cable Workers*)
- Supervisors of electrical power line and cable workers (in 7212 *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations*)

7245 Telecommunications Line and Cable Workers

Telecommunications Line and Cable Workers install, repair and maintain telecommunication lines and cables. They are employed by cable television companies and by telephone and other telecommunications services. Telecommunication line and cable apprentices are included in this unit group.

Examples of titles classified in this unit group

Apprentice Lineman/woman, Telecommunications
Cable Repairer, Telecommunications
Communication Technician, Construction
Construction Technician, CATV
Lineman/woman, Telecommunications
Telecommunications Line Installer
Splicer Technician, Telephone
Telephone Line Technician

Main duties

Telecommunications Line and Cable Workers perform some or all of the following duties:

- Install, remove, maintain and repair aerial and underground telephone and other telecommunication transmission and distribution lines, cables and associated hardware
- Install (but do not repair or maintain) cable television lines and cables
- Splice and repair various types and sizes of telephone and other telecommunication cables including single line, coaxial and fibre optic
- Inspect and test telecommunication transmission lines and cables for transmission characteristics and to locate faults
- Analyze and record test results
- Climb and work aloft on poles, ladders or other support structures or work in confined spaces such as trenches, tunnels and crawl spaces
- Communicate with other workers to co-ordinate the preparation and completion of work assignments
- Assist in the erection and removal of telecommunication poles, towers and associated support structures.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a four-year telecommunications line and cable apprenticeship program
  or
  A combination of over three years work experience in the trade and some industry-related or other specialized courses is usually required.
- Trade certification is available, but not mandatory, in Alberta and the Yukon.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Cable Television Service and Maintenance Technicians* (7247)
- *Telecommunication Installation and Repair Workers* (7246)
- Supervisors of telecommunications line and cable workers (in 7212 *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations*)

7246 Telecommunications Installation and Repair Workers

Telecommunications Installation and Repair Workers install, test, maintain and repair telephones, telephone switching equipment or other telecommunications equipment. They are employed by telephone, telegraph and other telecommunications transmission services establishments. Telecommunications installation and repair apprentices are included in this unit group.

Examples of titles classified in this unit group

Apprentice Communication Electrician, Switching
Cellular Telephone Technician
Central Office Technician
Communication Technician, Telephone
Exchange Tester
Line and Station Installer, Telephone
Mobile Radio Installer
Private Branch Exchange (PBX) Installer
Switch Network Installer and Repairer
Telecommunications Equipment Technician
Telephone Installer

Main duties

Telephone installers and repairers perform some or all of the following duties:

- Install, arrange, remove and maintain telephone equipment, wiring and associated hardware
- Test installed telephone systems to locate transmission faults
- Repair or replace defective and damaged telephones, wire and associated equipment.

Switch network installers and repairers perform some or all of the following duties:

- Install electromechanical, analog and digital trunking systems, circuits and equipment in telecommunications central offices and switching centres
- Inspect and test trunking systems, circuits and equipment
- Analyze test results and adjust, change or repair switching system and associated equipment.

Telecommunications service testers perform some or all of the following duties:

- Operate computerized testing systems to conduct service tests on customer lines and equipment
- Determine the nature, cause and location of service trouble
- Initiate the dispatch of appropriate repair personnel
- Complete test reports and maintain test and service records
- May assist repair personnel to test lines, circuits and systems, isolate and clear cable faults and verify records.

Telecommunications equipment technicians perform some or all of the following duties:

- Install, remove and maintain various telecommunications equipment and related systems such as telex and facsimile machines, teletypewriters, mobile radios, cellular telephones, and other related telecommunications equipment
- Inspect and test operation of telecommunications equipment
- Diagnose and locate equipment faults, and adjust, replace or repair telecommunications equipment.

Employment requirements

- Completion of secondary school is usually required.
- Telephone and switch network installers and repairers require completion of an apprenticeship program ranging from three to four years
  or
  A combination of over three years work experience in the trade and some high school, college or industry related courses.
- Telecommunications equipment technicians usually require completion of a college electrical and electronics program and several months of on-the-job training.
- Trade certification is available, but not mandatory in Alberta, the Northwest Territories and the Yukon.
- Experience as an installer and repairer (telephone and switch network) is usually required for service testers.

Classified elsewhere

- *Telecommunications Line and Cable Workers* (7245)
- Supervisors of telecommunication installation and repair workers (in 7212 *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations*)

7247 Cable Television Service and Maintenance Technicians

Cable television service technicians install, maintain and repair cable television signal and associated equipment in homes and commercial buildings. Cable television maintenance technicians maintain and repair cable television transmission and distribution systems and associated hardware. They are employed by cable television companies. Cable television service and maintenance apprentices are included in this unit group.

Examples of titles classified in this unit group

Apprentice Community Antenna Television (CATV) Technician
Cable Television Installer
Cablevision Servicer
CATV Technician
Installation Technician, Cable Television
Maintenance Technician, Cable Television

Main duties

Cable television service technicians perform some or all of the following duties:

- Communicate with cable television subscribers and company personnel to determine work assignments
- Connect, disconnect and relocate cable outlets, install splitters, converters, pay TV equipment and install other cable hardware and systems at subscriber's premises
- Inspect, test and repair cable television signals and associated equipment at subscriber's premises.

Cable television maintenance technicians perform some or all of the following duties:

- Maintain and repair main aerial and underground cable television transmission lines, trunking and related distribution and interconnecting systems including power supplies and amplifiers
- Inspect, monitor, test and adjust cable transmission and distribution systems
- Repair or replace faulty cables, power supplies, amplifiers and other associated transmission and distribution equipment
- Climb and work aloft on poles, ladders or other support structures
- Communicate with other workers to co-ordinate the preparation and completion of work assignments.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a college program in electronics
  or
  A combination of college, correspondence or industry courses related to electronics and electrical systems and on-the-job training
  or
  Completion of a four year CATV technician apprenticeship program is required.
- Trade certification is available, but not mandatory, in British Columbia.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Supervisors of cable television service and maintenance technicians (in 7212 *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations*)
- Workers who install aerial or underground cable television lines (in 7245 *Telecommunications Line and Cable Workers*)

7251 Plumbers

Plumbers install, repair and maintain pipes, fixtures and other plumbing equipment used for water distribution and waste water disposal in residential, commercial and industrial buildings. They are employed in maintenance departments of factories, plants and similar establishments, by plumbing contractors or they may be self-employed. Plumber apprentices are included in this unit group.

Examples of titles classified in this unit group

Maintenance Plumber
Plumber
Plumber Apprentice
Plumbing Mechanic

Main duties

Plumbers perform some or all of the following duties:

- Read blueprints, drawings and specifications to determine layout of plumbing system, water supply network and waste and drainage systems
- Install, repair and maintain domestic, commercial or industrial plumbing fixtures and systems
- Locate and mark positions for pipe connections, passage holes and fixtures in walls and floors
- Cut opening in walls and floors to accommodate pipe and pipe fittings
- Measure, cut, bend and thread pipes using hand and power tools or machines
- Join pipes using couplings, clamps, screws, bolts, cement or soldering, brazing and welding equipment
- Test pipes for leaks using air and water pressure gauges.

Employment requirements

- Some secondary school education is required.
- Completion of a four to five-year apprenticeship program
  or
  A combination of over five years of work experience in the trade and some high school, college or industry courses in plumbing is usually required to be eligible for trade certification.
- Trade certification is compulsory in Nova Scotia, Prince Edward Island, New Brunswick, Quebec, Ontario, Saskatchewan, Alberta and British Columbia and available, but voluntary, in Newfoundland, Manitoba, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is available to qualified plumbers.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Steamfitters, Pipefitters and Sprinkler System Installers* (7252)
- Supervisors of plumbers (in 7213 *Contractors and Supervisors, Pipefitting Trades*)

7252 Steamfitters, Pipefitters and Sprinkler System Installers

Steamfitters and pipefitters lay out, assemble, fabricate, maintain and repair piping systems carrying water, steam, chemicals and fuel in heating, cooling, lubricating and other process piping systems. Sprinkler system installers fabricate, install, test, maintain and repair water, foam, carbon dioxide and dry chemical sprinkler systems in buildings, for fire protection purposes. Steamfitters, Pipefitters and Sprinkler System Installers are employed in maintenance departments of factories, plants and similar establishments, by pipefitting and sprinkler system contractors or they may be self-employed. Apprentices are included in this unit group.

Examples of titles classified in this unit group

Fire Sprinkler Fitter
Marine Pipefitter
Pipefitter
Sprinkler System Fitter
Sprinkler System Installer
Steamfitter

Main duties

Steamfitters and pipefitters perform some or all of the following duties:

- Read and interpret drawings and specifications to determine layout requirements
- Cut openings for pipe in walls, floors and ceilings using hand or power tools or machines
- Select type and size of pipe required
- Measure, cut, thread and bend pipe to required shape using hand and power tools
- Weld, braze, cement, solder and thread joints to join pipes and fabricate sections of piping system
- Test system for leaks using testing equipment
- Clean and maintain pipe units and fittings
- Remove and replace worn components
- Prepare cost estimates for clients.

Sprinkler system installers perform some or all of the following duties:

- Read and interpret drawings and specifications to determine layout requirements
- Install clamps, brackets and hangers to support piping system and sprinkler and fire protection equipment, using hand and power tools
- Select, measure, cut, ream and thread pipe and mount prepared pipe in supports
- Join pipes and piping sections using soldering and welding equipment
- Connect piping system to water mains, supply tanks, pumps, compressors and control equipment
- Test system for leaks using air or liquid pressure equipment
- Prepare cost estimates for clients.

Employment requirements

- Some secondary school education is required.
- Completion of a four to five-year apprenticeship program
  or
  A combination of over five years of work experience in the trade and some high school, college or industry courses in steamfitting, pipefitting or sprinkler system installation is usually required to be eligible for trade certification.
- Steamfitter-Pipefitter trade certification is compulsory in Quebec, Ontario, Alberta and British Columbia and available, but voluntary, in all other provinces and the territories.
- Sprinkler System Installer trade certification is compulsory in Quebec and British Columbia and available, but voluntary, in all other provinces and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified Steamfitters-Pipefitters and Sprinkler System Installers.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Plumbers* (7251)
- *Gas Fitters* (7253)
- Supervisors of steamfitters, pipefitters and sprinkler system installers (in 7213 *Contractors and Supervisors, Pipefitting Trades*)

7253 Gas Fitters

Gas Fitters install, inspect, repair and maintain gas lines and gas equipment such as meters, regulators, heating units and appliances in residential, commercial and industrial establishments. They are employed by gas utility companies and gas servicing companies. Gas fitter apprentices are included in this unit group.

Examples of titles classified in this unit group

Gas Customer Servicer
Gas Fitter
Gas Fitter Apprentice
Gas Servicer

Main duties

Gas Fitters perform some or all of the following duties:

- Study drawings and specifications to determine the layout of the installation and materials required
- Measure and mark reference points for installation of gas lines and equipment
- Install and maintain gas meters and regulators and gas lines between gas unit and gas meter
- Install, maintain and service gas heating units and their components, such as burners, valves and automatic controls
- Repair and service gas appliances and related equipment
- Test and adjust control mechanisms and check pipes and piping connections for gas leaks using gas detecting devices
- Attend to gas escape calls and assist in the investigation of gas fires and explosions
- Prepare reports on work performed and condition of facilities
- Advise clients regarding standards, safety features and maintenance of gas units and system.

Employment requirements

- Completion of secondary school may be required.
- Completion of a three-year gas fitter apprenticeship program
  or
  Several years of work experience in a pipefitting trade plus completion of a high school, college or industry gas fitter program are required.
- Gas fitter trade certification is compulsory in Alberta and available, but voluntary, in British Columbia, the Northwest Territories and the Yukon.
- A provincial gas fitter licence is required in all other provinces.

Additional information

- Progression to supervisory positions is possible with experience.
- Mobility between provinces may be restricted due to the differing licensing requirements.

Classified elsewhere

- *Plumbers* (7251)
- *Steamfitters, Pipefitters and Sprinkler System Installers* (7252)
- Supervisors of gas fitters (in 7213 *Contractors and Supervisors, Pipefitting Trades*)

7261 Sheet Metal Workers

Sheet Metal Workers fabricate, assemble, install and repair sheet metal products. They are employed by sheet metal fabrication shops, sheet metal products manufacturing companies and sheet metal work contractors. Sheet metal worker apprentices are also included in this unit group.

Examples of titles classified in this unit group

Apprentice Sheet Metal Worker
Coppersmith
Sheet Metal Fabricator
Sheet Metal Mechanic
Sheet Metal Worker

Main duties

Sheet Metal Workers perform some or all of the following duties:

- Read drawings and sketches of work to be performed and lay out, measure and mark sheet metal according to drawings or templates
- Operate light metalworking machines such as shears, brakes, punches and drill presses to cut, bend, punch, drill, shape or straighten sheet metal
- Operate laser or plasma cutting equipment to cut sheet metal
- Fit and join sheet metal parts using riveter, welding, soldering and similar equipment to fabricate products such as ventilation shafts, eavestroughs, partition frames, air and heat ducts, roof decking and sheet metal buildings
- Grind and buff seams, joints and rough surfaces
- Inspect product quality and installation to ensure conformance to specifications.

Employment requirements

- Some secondary school education is required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some high school, college or industry courses in sheet metal working is usually required to be eligible for trade certification.
- Trade certification is compulsory in Quebec, Ontario, Saskatchewan, Alberta and British Columbia and available, but voluntary, in all other provinces and territories.
- Interprovincial trade certification (Red Seal) is also available to qualified sheet metal workers.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal certification allows for interprovincial mobility.

Classified elsewhere

- *Metalworking Machine Operators* (9514)
- *Structural Metal and Platework Fabricators and Fitters* (7263)
- Aircraft sheet metal technicians (in 7315 *Aircraft Mechanics and Aircraft Inspectors*)
- Metal roofers (in 7291 *Roofers and Shinglers*)
- Supervisors of sheet metal workers (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades*)

7262 Boilermakers

Boilermakers fabricate, assemble, erect and repair boilers, vessels, tanks, heat exchangers and other heavy-metal structures. They are employed in boiler fabrication, manufacturing, ship building and similar industrial establishments. Boilermaker apprentices are included in this unit group.

Examples of titles classified in this unit group

Boilermaker Apprentice
Boiler Fitter
Boiler Installer
Boilermaker
Construction Boilermaker
Industrial Boilermaker
Marine Boilermaker

Main duties

Boilermakers perform some or all of the following duties:

- Read blueprints or specifications to plan sequence of operation
- Lay out plate, sheet steel or other heavy metal and mark bending and cutting lines on work piece using protractors, compasses and drawing instruments or templates
- Set up and operate heavy-metal working machines such as brakes, rolls, shears, flame cutters and drill presses to cut, shape and form metal into parts or sections
- Fit and weld metal parts or sections together to fabricate boilers, vessels, tanks, heat exchangers, piping and other heavy-metal products
- Erect and install boilers and other heavy-metal products according to specifications using hand and power tools
- Repair and perform maintenance work on boilers and other heavy-metal products
- Direct activities of hoist or crane operators and other workers during fabrication, assembly, installation or repair of structures.

Employment requirements

- Some secondary school education is required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some high school, college or industry courses in boilermaking is usually required to be eligible for trade certification.
- Trade certification is compulsory in Quebec and Alberta and available, but voluntary, in all other provinces.
- Marine boilermakers in New Brunswick may require completion of a separate apprenticeship program and trade certification.
- Interprovincial trade certification (Red Seal) is also available to qualified boilermakers.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Structural Metal and Platework Fabricators and Fitters* (7263)
- Supervisors of boilermakers (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades*)

7263 Structural Metal and Platework Fabricators and Fitters

Structural Metal and Platework Fabricators and Fitters fabricate, assemble and fit steel or other metal components for buildings, bridges, tanks, boilers, pressure vessels and other similar structures and products. They are employed in structural steel, boiler and platework fabrication plants and by heavy machinery manufacturing and shipbuilding companies. Apprentices are included in this unit group.

Examples of titles classified in this unit group

Metal Fabricator
Platework Fitter
Plater
Shipfitter
Shipfitter Apprentice
Steel Fabricator
Structural Steel Fitter

Main duties

Structural Metal and Platework Fabricators and Fitters perform some or all of the following duties:

- Lay out reference points and patterns on heavy metal according to component specifications
- Assemble and fit metal sections and plates to form complete units or subunits using tack welding, bolting or other methods
- Set up and operate various heavy-duty metal-working machines such as brake presses, shears, cutting torches, grinders, drills and computer numerical control (CNC) equipment to bend, cut, form, punch, drill or otherwise form heavy metal components
- Construct patterns and templates as guides for layouts.

Employment requirements

- Some secondary school education is required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some college or industry courses in structural steel and platework fabrication is usually required to be eligible for trade certification.
- Trade certification is available, but not compulsory, in Newfoundland, Nova Scotia, New Brunswick, Ontario, Alberta and British Columbia.
- Interprovincial trade certification (Red Seal) is also available to qualified fabricators and fitters.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal certification allows for interprovincial mobility.

Classified elsewhere

- *Boilermakers* (7262)
- *Skilled Welders* (7265)
- Structural steel erectors
  (in 7264 *Ironworkers*)
- Supervisors of structural metal and platework fabricators and fitters
  (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades*)

7264 Ironworkers

Ironworkers fabricate, erect, hoist, install, repair and service structural ironwork, precast concrete, concrete reinforcing materials, curtain walls, ornamental iron and other metals used in the construction of buildings, bridges and other structures and equipment. They are employed by construction ironwork contractors. Ironwork apprentices are included in this unit group.

Examples of titles included in this unit group

Ironworker
Ironworker Apprentice
Ornamental Ironworker
Reinforcing Ironworker
Structural Steel Erector

Main duties

Ironworkers perform some or all of the following duties:

- Erect and install scaffolding, hoisting equipment and rigging
- Signal crane operator to position steel units according to blueprints
- Align and weld or bolt steel units in place
- Erect structural and architectural precast concrete components for buildings, bridges, towers and other structures
- Assemble and erect prefabricated metal structures
- Position and secure steel bars or metal mesh in concrete forms to reinforce concrete structures
- Install ornamental and other structural metalwork such as curtain walls, metal stairways, railings and power doors.

Employment requirements

- Some secondary school education is required.
- Completion of a two to three-year apprenticeship program
  or
  Over three years of work experience in the trade and some high school, college or industry courses in ironworking are usually required to be eligible for trade certification.
- Trade certification is compulsory in Quebec and Alberta and available, but voluntary, in Newfoundland, Nova Scotia, New Brunswick, Ontario, Saskatchewan and British Columbia.
- Interprovincial trade certification (Red Seal) is also available to qualified ironworkers.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- Supervisors of ironworkers (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades*)

7265 Welders

Welders in this unit group operate welding equipment to weld ferrous and non-ferrous metals. They are employed by companies that manufacture structural steel and platework, boilers, heavy machinery, aircraft and ships and by welding contractors, welding shops and other industrial sectors or they may also be self-employed. Welder apprentices are included in this unit group.

Examples of titles included in this unit group

Aircraft Welder
Electric Arc Welder
Gas-shielded Arc Welder
Precision Welder
Pressure Vessel Welder
Welder
Welder-fitter

Main duties

Welders in this unit group perform some or all of the following duties:

- Read and interpret blueprints or welding process specifications
- Operate manual or semi-automatic welding equipment to fuse metal segments using processes such as gas tungsten arc (GTAW), gas metal arc (GMAW), flux-cored arc (FAW), plasma arc (PAW), shielded metal arc (SMAW), resistance welding and submerged arc welding (SAW)
- Operate manual or semi-automatic flame-cutting equipment
- Operate brazing and soldering equipment
- Operate metal shaping machines such as brakes, shears and other metal straightening and bending machines.

Welders may specialize in certain types of welding such as custom fabrication, ship building and repair, aerospace precision welding, pressure vessel welding, pipeline construction welding, structural construction welding, or machinery and equipment repair welding.

Employment requirements

- Some secondary school education is usually required.
- Completion of a three-year apprenticeship program
  or
  A combination of over three years of work experience in the trade and some college or industry courses in welding is usually required to be eligible for trade certification.
- Trade certification is compulsory in Nova Scotia and Alberta and available, but voluntary, in Newfoundland, Prince Edward Island, New Brunswick, Manitoba, Saskatchewan, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified welders.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.
- In data provided by Statistics Canada, unit groups 7265 and 9515 are combined to form 9510 *Welders and Soldering Machine Operators*.

Classified elsewhere

- *Welding, Brazing and Soldering Machine Operators* (9515)
- Supervisors of welders in this unit group (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades*)
- Underwater welders (in 7382 *Commercial Divers*)

7266 Blacksmiths and Die Setters

Blacksmiths forge a variety of metal items, such as tools, chains, wrought iron fixtures, agricultural implements and structural components. Die setters set up forging machines, such as forging presses, drop hammers, forging rolls and upsetters. They are employed primarily by fabricated metal products, machinery and transportation equipment manufacturing companies.

Examples of titles classified in this unit group

Anvilsmith
Blacksmith
Die Setter
Hammersmith
Toolsmith

Main duties

Blacksmiths perform some or all of the following duties:

- Heat metal items in forge
- Hammer, punch, cut or otherwise form metal workpieces into desired shapes and sizes
- Forge special tools from metal or devise special jigs or fixtures
- Temper, harden or anneal forged items
- Shape metal using power forging machinery.

Die setters perform some or all of the following duties:

- Select dies for forging according to work order and specifications
- Position, align and bolt dies to ram and anvil of power presses and hammers
- Check initial operation of forging machine to ensure that machine is set up properly for use by forging machine operators.

Employment requirements

- Completion of secondary school may be required.
- Several years of experience as a forging machine operator may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Forging Machine Operators* (9512)
- Agriculture blacksmiths, farriers and horseshoers (in 7383 *Other Trades and Related Occupations*)
- Supervisors of blacksmiths and die setters (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades*)

7271 Carpenters

Carpenters construct, erect, install, maintain and repair structures and components of structures made of wood, wood-substitutes and other materials. They are employed by construction companies, carpentry contractors, maintenance departments of factories, plants and other establishments or they may be self-employed. Carpenter apprentices are included in this unit group.

Examples of titles classified in this unit group

Apprentice Carpenter
Carpenter
Finish Carpenter
Journeyman/woman Carpenter
Maintenance Carpenter
Renovation Carpenter
Rough Carpenter

Main duties

Carpenters perform some or all of the following duties:

- Read and interpret blueprints, drawings and sketches to determine specifications and calculate requirements
- Prepare layouts in conformance to building codes, using measuring tools
- Measure, cut, shape, assemble and join materials made of wood, wood substitutes and other materials
- Build foundations, install floor beams, lay subflooring and erect walls and roof systems
- Fit and install trim items, such as doors, stairs, moulding and hardware
- Maintain, repair and renovate residences and wooden structures in mills, mines, hospitals, industrial plants and other establishments
- Supervise apprentices and other construction workers
- Prepare cost estimates for clients.

Employment requirements

- Some secondary school education is usually required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some high school, college or industry courses in carpentry is usually required to be eligible for trade certification.
- Trade certification is compulsory in Quebec and available but voluntary, in all other provinces and the territories.
- Interprovincial trade certification (Red Seal) is also available to qualified carpenters.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Cabinetmakers* (7272)
- Supervisors of carpenters (in 7215 *Contractors and Supervisors, Carpentry Trades*)

7272 Cabinetmakers

Cabinetmakers construct and repair wooden cabinets, furniture, fixtures and related products. They are employed by furniture manufacturing or repair companies, construction companies and cabinetmaking contractors or they may be self-employed. Cabinetmaker apprentices are included in this unit group.

Examples of titles classified in this unit group

Cabinetmaker
Cabinetmaker Apprentice
Custom Wood Furniture Maker
Furniture Cabinetmaker

Main duties

Cabinetmakers perform some or all of the following duties:

- Study plans, specifications or drawings of articles to be made, or prepare specifications
- Mark outlines or dimensions of parts on wood
- Operate woodworking machines, such as power saws, jointers, mortisers and shapers, and use hand tools to cut, shape and form parts and components
- Trim joints and fit parts and subassemblies together to form complete unit using glue and clamps and reinforce joints using nails, screws or other fasteners
- Sand wooden surfaces and apply veneer, stain or polish to finished products
- Repair or restyle wooden furniture, fixtures and related products.

Employment requirements

- Some secondary school education is usually required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some high school or college courses in cabinetmaking is usually required to be eligible for trade certification.
- Trade certification is available, but voluntary, in Prince Edward Island, New Brunswick, Ontario, Alberta, British Columbia, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified cabinetmakers.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Carpenters* (7271)
- *Woodworking Machine Operators* (9513)
- Supervisors of cabinetmakers (in 7215 *Contractors and Supervisors, Carpentry Trades*)

7281 Bricklayers

Bricklayers lay bricks, concrete blocks, stone and other similar materials to construct or repair walls and other structures in accordance with blueprints and specifications. They are employed by construction companies and bricklaying contractors or they may be self-employed. Bricklayer apprentices are included in this unit group.

Examples of titles classified in this unit group

Apprentice Bricklayer
Bricklayer
Brickmason
Marble Mason
Refractory Bricklayer
Stonecutter
Stonemason

Main duties

Bricklayers perform some or all of the following duties:

- Prepare and lay bricks, concrete blocks, stone, structural tiles and similar materials to construct or repair walls, foundations and other structures in residential, industrial and commercial construction
- Lay bricks or other masonry units to build residential or commercial chimneys and fireplaces
- Lay radial bricks to build masonry shells of industrial chimneys
- Lay or install firebricks to line industrial chimneys and smokestacks
- Line or reline furnaces, kilns, boilers and similar installations using refractory or acid-resistant bricks, refractory concretes, plastic refractories and other materials
- Lay bricks, stone or similar materials to provide veneer facing to walls or other surfaces
- Construct and install prefabricated masonry units
- Lay bricks or other masonry units to build patios, garden walls and other decorative installations.

Employment requirements

- Some secondary school education is required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some high school, college or industry courses in bricklaying is usually required to be eligible for trade certification.
- Trade certification is compulsory in Nova Scotia, New Brunswick and Quebec and available, but voluntary, in all other provinces and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified bricklayers.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Tilesetters* (7283)
- Supervisors of bricklayers (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7282 Cement Finishers

Cement Finishers smooth and finish freshly poured concrete, apply curing or surface treatments and restore, repair or replace hardened concrete structures. They are employed by construction companies, cement and concrete contractors and manufacturers of precast concrete products or they may be self-employed. Cement finisher apprentices are included in this unit group.

Examples of titles classified in this unit group

Cement Finisher Apprentice
Cement Mason
Concrete Finisher
Concrete Mason
Precast Concrete Finisher

Main duties

Cement Finishers perform some or all of the following duties:

- Check formwork, granular base and steel reinforcement materials and direct placement of concrete into forms or onto surfaces according to grade
- Fill hollows and remove high spots to smooth freshly poured concrete
- Operate power vibrator to compact concrete
- Level top surface of concrete according to grade and depth specifications using straightedge or float
- Impart desired finish to concrete surfaces using hand and power tools
- Install anchor bolts, steel plates, door sills and other fixtures in freshly poured concrete
- Apply hardening and sealing compounds to cure surface of concrete
- Waterproof, damp-proof and restore concrete surfaces
- Repair, resurface and replace worn or damaged sections of floors, walls, roads and other concrete structures.

Employment requirements

- Some secondary school education is required.
- Completion of a two to three-year apprenticeship program
  or
  Over three years of work experience in the trade and some high school, college or industry courses in cement finishing are usually required to be eligible for trade certification.
- Trade certification is compulsory in Quebec and available, but voluntary, in Ontario, Saskatchewan and Alberta.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Supervisors of cement finishers (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7283 Tilesetters

Tilesetters cover interior and exterior walls, floors and ceilings with ceramic, marble and quarry tile, mosaics or terrazzo. They are employed by construction companies and masonry contractors or they may be self-employed. Tilesetter apprentices are included in this unit group.

Examples of titles included in this unit group

Apprentice Tilesetter
Ceramic Tile Installer
Marble Setter
Terrazzo Polisher
Terrazzo Worker
Tile Installer
Tilesetter

Main duties

Tilesetters perform some or all of the following duties:

- Prepare, measure and mark surface to be covered
- Build underbeds and install anchor bolts, wires and brackets
- Mix, apply and spread mortar, cement, mastic, glue or other adhesives using hand trowel
- Set tiles in position and apply pressure to affix tiles to base
- Align and straighten tile using levels, squares and straightedges
- Cut and fit tiles around obstacles and openings using hand and power cutting tools
- Pack grout into joints between tiles and remove excess grout
- Install tile strips
- Lay and set mosaic tiles to create decorative wall, mural and floor designs
- Mix, lay and polish terra surfaces
- Remove and replace cracked or damaged tiles.

Employment requirements

- Some secondary school education is required.
- Completion of a three-year apprenticeship program
  or
  A combination of over three years of work experience in the trade and some high school, college or industry courses in tilesetting is usually required to be eligible for trade certification.
- Trade certification is compulsory in Quebec and available, but voluntary, in Saskatchewan and Alberta.

Additional information

- In provinces where there is no apprenticeship, this trade is usually learned through several years of on-the-job training.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Bricklayers* (7281)
- Supervisors of tilesetters (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7284 Plasterers, Drywall Installers and Finishers and Lathers

Plasterers apply coats of plaster to interior and exterior walls, ceilings and building partitions to produce plain or decorative surfaces. Drywall installers and finishers install and finish drywall sheets and various types of ceiling systems. Lathers install support framework for ceiling systems, interior and exterior walls and building partitions. They are employed by construction companies and by plastering, drywalling and lathing contractors or they may be self-employed. Apprentices are also included in this unit group.

Examples of titles classified in this unit group

Acoustical Ceiling Installer
Ceiling Installer
Drywall Applicator
Drywall Finisher
Drywall Taper
Interior Systems Mechanic
Lather
Plasterer
Sheetrock Applicator
Wood Lather

Main duties

Plasterers perform some or all of the following duties:

- Clean and prepare surfaces
- Mix plaster ingredients in trough to desired consistency
- Apply, level and smooth coats of plaster using trowels, floats, brushes and spraying equipment
- Trowel or spray coats of stucco over exteriors of buildings to form weatherproof surfaces
- Finish corners and angles and create decorative designs in finish coat, if required
- Cure freshly plastered surfaces
- Mould and install ornamental plaster panels, cornices and trim
- Spray acoustic materials or texture finish over walls and ceilings.

Drywall installers and finishers perform some or all of the following duties:

- Measure, cut and fit drywall sheets for installation on walls and ceilings
- Position and secure sheets to metal or wooden studs or joists
- Cut and install metal corner beads to protect exterior corners
- Fill joints, nail indentations, holes and cracks with joint compound using trowel and broad knife
- Tape over joints using taping machine and embed tape in compound
- Smooth out excess compound and allow coat to dry
- Apply successive coats of compound and sand seams and joints
- Fabricate and install suspended metal ceiling grids and place in panels to form acoustical and coffered ceilings.

Lathers perform some or all of the following duties:

- Prepare wall and ceiling layouts
- Install metal stud framing and furring for interior drywall or plaster walls and ceilings, using hand and power tools
- Attach metal or gypsum lath to studs or furring using nails, screws, clips or wire ties
- Cut openings in lath for heating and ventilation piping, ducts and electrical outlets
- Install corner beads and wire mesh around beams to which plaster is to be applied.

Employment requirements

- Some secondary school education is required.
- Completion of a three-year apprenticeship program in plastering, drywalling or lathing
  or
  A combination of over three years of work experience and some high school, college or industry courses in plastering, drywalling or lathing is usually required.
- Plasterer trade certification is compulsory in Quebec and available, but not compulsory, in Ontario, Manitoba, Saskatchewan and Alberta.
- Drywall installer and finisher trade certification is available, but not compulsory, in Manitoba and Saskatchewan.

7284 Plasterers, Drywall Installers and Finishers and Lathers

- Lather trade certification is compulsory in Quebec and available, but not compulsory, in Ontario, Manitoba, Alberta and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified lathers.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification for lathers allows interprovincial mobility.

Classified elsewhere

- Supervisors of trade workers in this unit group (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7291 Roofers and Shinglers

Roofers install, repair or replace flat roofs and shingles, shakes or other roofing tiles on sloped roofs. Shinglers install and replace shingles, tiles and similar coverings on sloped roofs. They are employed by roofing contractors or they may be self-employed. Metal roofers and roofer apprentices are also included in this unit group.

Examples of titles included in this unit group

Apprentice Roofer
Asphalt Roofer
Built-up Roofer
Flat Roofer
Metal Roofer
Roofer
Shingler
Single-ply Roofer

Main duties

Roofers perform some or all of the following duties:

- Install, repair or replace built-up roofing systems using materials such as asphalt saturated felts and hot asphalt and gravel
- Install, repair or replace single-ply roofing system using waterproof sheet materials such as modified plastics, elastomeric or other asphaltic compositions
- Install, repair or replace shingles, shakes and other roofing tiles on sloped roofs of buildings
- Install sheet metal flashings
- Apply waterproof coatings to concrete or other masonry surfaces below or above ground level
- Install and repair metal roofs using hand and power tools
- Set up scaffolding to provide safe access to roofs.

Shinglers perform some or all of the following duties:

- Install or replace asphalt shingles, wood shingles and shakes and masonry or baked clay roofing tiles on sloped roofs of buildings
- Set up scaffolding to provide safe access to roofs.

Employment requirements

- Some secondary school education is required.
- For roofers, completion of a two to three-year apprenticeship program
  or
  Over three years of work experience in the trade are usually required to be eligible for trade certification.
- Roofing trade certification is compulsory in Quebec and British Columbia and available, but voluntary, in Nova Scotia, Prince Edward Island, New Brunswick, Manitoba, Saskatchewan, Alberta and the Northwest Territories.
- Interprovincial trade certification (Red Seal) is also available to qualified roofers.
- Shinglers require one to two years of on-the-job training.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification for roofers allows for interprovincial mobility.

Classified elsewhere

- Supervisors of roofers and shinglers (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7292 Glaziers

Glaziers prepare, install and replace glass in residential, commercial and industrial buildings, on exterior walls of buildings and other structures and in vehicles, furniture and other products. They are employed by construction glass installation contractors, retail service and repair shops and glass fabrication shops. Glazier apprentices are included in this unit group.

Examples of titles classified in this unit group

Auto Glass Glazier
Glazier
Glazier and Metal Mechanic
Glazier Apprentice
Plate Glass Installer
Stained Glass Glazier
Structural Glass Glazier

Main duties

Glaziers perform some or all of the following duties:

- Read and interpret specifications to determine type and thickness of glass, frame and materials required
- Measure and mark glass and cut glass using glass cutters
- Position glass panes into frames and secure glass using clips, points or mouldings
- Assemble and install prefabricated glass, mirrors or glass products on walls, ceilings or exteriors of building
- Fabricate metal frames for glass installation
- Install pre-cut mirrors and opaque and transparent glass panels in frames to form exterior walls of buildings
- Replace windows and windshields in vehicles and glass in furniture and other products
- Prepare and install skylights and stained or other special glass in churches, museums and other establishments
- Prepare cost estimates for customers or clients.

Employment requirements

- Some secondary school education is required.
- Completion of a four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some high school, college or industry courses in glazing is usually required to be eligible for trade certification.
- Trade certification is available, but not compulsory, in Prince Edward Island, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified glaziers.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Glass Forming and Finishing Machine Operators and Glass Cutters* (9413)
- Supervisors of glaziers (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7293 Insulators

Insulators apply insulation materials to plumbing, heating, cooling and refrigeration systems, piping equipment and pressure vessels, and walls, floors and ceilings of buildings and other structures, to prevent or reduce the passage of heat, cold, sound or fire. They are employed by construction companies and insulation contractors or they may be self-employed. Insulator apprentices are included in this unit group.

Examples of titles classified in this unit group

Boiler and Pipe Insulator
Building Insulator
Fire Insulator
Heat and Frost Insulator
Insulation Applicator
Insulation Mechanic
Insulator
Insulator Apprentice
Sound Insulator

Main duties

Insulators perform some or all of the following duties:

- Read and interpret drawings and specifications to determine insulation requirements and select type of insulation required
- Measure and cut insulating material to required dimensions using hand and power tools
- Apply and secure insulation using spraying, blowing, pasting, strapping, taping and other application and installation methods
- Fit insulation around obstructions and between studs and joists
- Install vapour barriers
- Brush waterproofing cement over insulating materials to finish surfaces
- Remove asbestos or urea-formaldehyde insulation from buildings when required.

Employment requirements

- Some secondary school education is required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some high school, college or industry courses in insulating is usually required to be eligible for trade certification.
- Trade certification is compulsory in Quebec and Saskatchewan and available, but voluntary, in New Brunswick, Alberta and British Columbia.
- Interprovincial trade certification (Red Seal) is also available to qualified insulators.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- Supervisors of insulators (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7294 Painters and Decorators

Painters and Decorators apply paint, wallpaper and other finishes to interior and exterior surfaces of buildings and other structures. They are employed by construction companies, painting contractors, building maintenance contractors or they may be self-employed. Painter and Decorator apprentices are included in this unit group.

Examples of titles classified in this unit group

Construction Painter
Maintenance Painter
Painter
Painter and Decorator
Painter and Decorator Apprentice
Paperhanger

Main duties

Painters and Decorators perform some or all of the following duties:

- Determine quantities of materials required
- Prepare and clean surfaces using methods such as scraping, sanding, sand-blasting, hydro-blasting and steam-cleaning; and, remove old wallpaper and repair cracks and holes in walls
- Mix paint to obtain desired colour and texture
- Apply paint or other materials, such as fibre glass, metal coating or fire retardant using brushes, rollers or spray equipment
- Measure, cut and apply wallpaper or fabric to walls
- Assemble and erect scaffolding and swing gates
- Advise customer on selection of colour schemes and choice of wall coverings
- Provide cost estimates to clients.

Employment requirements

- Some secondary school education is usually required.
- Completion of a two to three-year apprenticeship program
  or
  Over three years of work experience in the trade is usually required to be eligible for trade certification.
- Trade certification is compulsory in Quebec and voluntary in all other provinces and territories.
- Interprovincial trade certification (Red Seal) is also available to qualified painters and decorators.

Additional information

- Progression to a supervisory position is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Painters and Coaters, Manufacturing* (9496)
- Interior decorators (in 6421 *Retail Salespersons and Sales Clerks*)
- Supervisors of painters and decorators (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7295 Floor Covering Installers

Floor Covering Installers install carpet, wood, linoleum, vinyl and other resilient floor coverings in residential, commercial, industrial and institutional buildings. They are employed by construction companies, floor-covering contractors and carpet outlets or they may be self-employed. Floor covering installer apprentices are included in this unit group.

Examples of titles classified in this unit group

Carpet Installer
Carpet Layer
Floor Covering Installer
Floor Covering Mechanic
Resilient Floor Installer
Rug Installer
Vinyl Floor Installer

Main duties

Floor Covering Installers perform some or all of the following duties:

- Inspect, measure and mark surfaces to be covered
- Measure, cut and fasten underlay and underpading
- Measure, cut and install carpeting using hand or machine stitcher, seaming iron, bonding tape or other bonding materials
- Stretch carpeting using knee-kicker or power stretcher and secure carpeting to floor or other surfaces using staple gun or other devices
- Measure, cut and install resilient floor covering using adhesive, rollers and other hand tools
- Install hardwood floors, such as strip floors, block floors or plank floors using glue, staples, nails or other means
- Inspect and repair damaged floor coverings
- Estimate material and labour costs.

Employment requirements

- Some secondary school education is usually required.
- Completion of a two to three-year apprenticeship program
  or
  Over three years of work experience in the trade is usually required to be eligible for trade certification.
- Trade certification is compulsory in Quebec and voluntary in Alberta, British Columbia and the Northwest Territories.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Supervisors of floor covering installers (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7311 Construction Millwrights and Industrial Mechanics (Except Textile)

Construction Millwrights and Industrial Mechanics install, maintain and repair stationary industrial machinery and mechanical equipment. Construction Millwrights are employed by millwrighting contractors. Industrial Mechanics are employed in manufacturing plants, utilities and other industrial establishments. Construction millwright and industrial mechanic apprentices are included in this unit group.

Examples of titles classified in this unit group

Construction Millwright
Industrial Mechanic
Maintenance Millwright
Millwright
Millwright Apprentice
Plant Equipment Mechanic
Treatment Plant Mechanic

Main duties

Construction Millwrights and Industrial Mechanics perform some or all of the following duties:

- Read diagrams and schematic drawings to determine work procedures
- Install stationary industrial machinery and mechanical equipment according to layout plans using hand and power tools
- Operate hoisting and lifting devices to position machinery and parts during the installation, set-up and repair of machinery
- Inspect and examine machinery and equipment to detect and investigate irregularities and malfunctions
- Adjust machinery and repair or replace defective parts
- Operate machine tools such as lathes and grinders to fabricate parts required during overhaul, maintenance or set-up of machinery
- Clean, lubricate and perform other routine maintenance work on machinery
- Construct foundations for machinery or direct other workers to construct foundations
- Assemble machinery and equipment prior to installation using hand and power tools and welding equipment.

Employment requirements

- Some secondary school education is required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over five years of work experience in the trade and some high school, college or industry courses in industrial machinery repair or millwrighting is usually required to be eligible for trade certification.
- Industrial mechanic trade certification is compulsory in Quebec and available, but voluntary, in all other provinces and territories.
- Construction millwright trade certification is available, but not compulsory, in New Brunswick and Ontario.
- Interprovincial trade certification (Red Seal) is also available to qualified industrial mechanics or millwrights.

7311 Construction Millwrights and Industrial Mechanics (Except Textile)

Additional information

- Construction millwrights are mostly engaged in the initial installation of industrial plant machinery and equipment; industrial mechanics are more concerned with the post-installation maintenance and repair of machinery and equipment.
- Progression to supervisory positions is possible with experience.
- Red Seal certification allows for interprovincial mobility.

Classified elsewhere

- *Heavy-Duty Equipment Mechanics* (7312)
- *Industrial Instrument Technicians and Mechanics* (2243)
- *Textile Machinery Mechanics and Repairers* (7317)
- Supervisors of industrial mechanics and millwrights (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7312 Heavy-Duty Equipment Mechanics

Heavy-Duty Equipment Mechanics repair, overhaul and maintain mobile heavy-duty equipment used in construction, forestry, mining, material handling, landscaping, land clearing, farming and similar activities. They are employed by establishments which own and operate heavy equipment and by heavy equipment dealers, rental and service establishments. Heavy-duty equipment mechanic apprentices are included in this unit group.

Examples of titles classified in this unit group

Construction Equipment Mechanic
Diesel Mechanic, Heavy Equipment
Farm Equipment Mechanic
Heavy-Duty Equipment Mechanic Apprentice
Heavy Equipment Mechanic
Heavy Mobile Logging Equipment Mechanic
Heavy Mobile Mining Equipment Mechanic
Tractor Mechanic

Main duties

Heavy-Duty Equipment Mechanics perform some or all of the following duties:

- Check bulldozers, cranes, graders and other heavy construction, logging and mining equipment for proper performance and inspect equipment to detect faults and malfunctions
- Diagnose faults or malfunctions to determine extent of repair required
- Adjust equipment and repair or replace defective parts, components or systems, using hand and power tools
- Test repaired equipment for proper performance and to ensure that work meets manufacturers' specifications
- Clean, lubricate and perform other routine maintenance work on equipment
- Perform repair work on heavy trucks.

Employment requirements

- Some secondary school education is required.
- Completion of a four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some high school, college or industry courses in heavy equipment repair is usually required to be eligible for trade certification.
- Heavy-duty equipment mechanic trade certification is compulsory in Quebec and Alberta and available, but voluntary, in all other provinces and territories.
- Farm equipment mechanic trade certification is available, but voluntary in Prince Edward Island, Ontario, Saskatchewan and Alberta.
- Interprovincial trade certification (Red Seal) is also available to qualified heavy equipment and form equipment mechanics.
- Mine equipment mechanics in Nova Scotia may require completion of a mine equipment repair apprenticeship program and trade certification.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal certification allows for interprovincial mobility.

Classified elsewhere

- *Construction Millwrights and Industrial Mechanics (Except Textile)* (7311)
- Diesel mechanics, motor vehicles (in 7321 *Motor Vehicle Mechanics, Technicians and Mechanical Repairers*)
- Supervisors of heavy-duty equipment mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7313 Refrigeration and Air Conditioning Mechanics

Refrigeration and Air Conditioning Mechanics install, maintain, repair and overhaul residential central air conditioning systems, commercial and industrial refrigeration and air conditioning systems and combined heating and cooling systems. They are employed by refrigeration and air conditioning installation contractors and retail and servicing establishments. Refrigeration and air conditioning mechanic apprentices are included in this unit group.

Examples of titles classified in this unit group

Central Air Conditioning Mechanic
Commercial Air Conditioning Mechanic
Heating and Cooling Mechanic
Refrigeration and Air Conditioning Mechanic
Refrigeration and Air Conditioning Mechanic Apprentice
Refrigeration Mechanic

Main duties

Refrigeration and Air Conditioning Mechanics perform some or all of the following duties:

- Read and interpret blueprints, drawings or other specifications
- Measure and lay out reference points for installation
- Assemble and install refrigeration or air conditioning components such as motors, controls, gauges, valves, pumps, condensers and compressors using hand and power tools
- Measure and cut piping, and connect piping using welding and brazing equipment
- Install, repair and maintain combined heating and cooling units
- Start up system and test for leaks using testing devices
- Recharge system with refrigerant and perform routine maintenance or servicing
- Repair and replace parts and components or overhaul entire refrigeration, air conditioning or heat pump systems
- Prepare work estimates for clients.

Employment requirements

- Some secondary school education is usually required.
- Completion of a four-year apprenticeship program
  or
  A combination of over five years of work experience in the trade and some high school, college or industry courses in refrigeration and air conditioning repair is usually required to be eligible for trade certification.
- Trade certification is compulsory in Nova Scotia, Quebec, Ontario, Saskatchewan, Alberta and British Columbia and available, but voluntary, in all other provinces and territories.
- Interprovincial trade certification (Red Seal) is also available to qualified refrigeration and air conditioning mechanics.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- Domestic refrigeration and window air conditioner servicers and repairers (in 7332 *Electric Appliance Servicers and Repairers*)
- Supervisors of refrigeration and air conditioning mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*).

7314 Railway Carmen/women

Railway Carmen/women inspect, maintain and repair railway passenger and freight cars. They are employed by railway transport companies. Railway carman/woman apprentices are included in this unit group.

Examples of titles classified in this unit group

Carman/woman
Railway Carman/woman
Railway Carman/woman Apprentice

Main duties

Railway Carmen/women perform some or all of the following duties:

- Inspect interior and exterior components of railway passenger and freight cars to determine defects and extent of wear and damage
- Repair defective or damaged metal and wood components, using hand and power tools
- Repair and install railway car parts such as compressors, air valves, bearings, air cylinders and piping
- Repair and repaint wooden fixtures
- Replace damaged windows and repair upholstery
- Test and adjust parts using testing gauges and other test equipment.

Employment requirements

- Some secondary school education is usually required.
- Completion of an internal company apprenticeship program or three to four years of on-the-job training are usually required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Supervisors of railway carmen/women (in 7216 *Contractors and Supervisors, Mechanic Trades*).

7315 Aircraft Mechanics and Aircraft Inspectors

Aircraft mechanics maintain, repair and overhaul aircraft structures, mechanical and hydraulic systems. Aircraft inspectors inspect aircraft and aircraft systems following manufacture, modification, maintenance, repair or overhaul. Aircraft Mechanics and Aircraft Inspectors are employed by aircraft manufacturing, maintenance, and overhaul establishments and by airlines and other aircraft operators.

Examples of titles classified in this unit group

Aircraft Inspector
Aircraft Maintenance Engineer
Aircraft Mechanic, Engine Overhaul
Aircraft Systems Inspector
Certified Aircraft Technician
Hydraulic Mechanic
Inspector, Flight Test
Inspector, Repair and Overhaul
Mechanic, Aircraft Maintenance
Shop Inspector, Aircraft Repair

Main duties

Aircraft mechanics perform some or all of the following duties:

- Troubleshoot aircraft structural, mechanical or hydraulic systems to identify problems and adjust and repair systems according to specifications and established procedures
- Repair and overhaul aircraft structural, mechanical or hydraulic systems
- Install or modify aircraft engines or other aircraft systems
- Dismantle airframes, aircraft engines or other aircraft systems for repair and overhaul, and reassemble.

Aircraft mechanics usually specialize in working on specific aircraft systems such as engines, engine accessories, airframes or hydraulic systems.

Aircraft inspectors perform some or all of the following duties:

- Inspect structural and mechanical systems of aircraft and certify that these systems meet Transport Canada and company standards of performance and safety
- Inspect work of aircraft mechanics performing maintenance, repair and overhaul, or modification of aircraft and aircraft mechanical systems to ensure adherence to standards and procedures
- Maintain detailed repair, inspection and certification records and reports.

Employment requirements

- Completion of secondary school is required.
- A college diploma in aircraft maintenance is usually required.
- Several years of on-the-job training are required for aircraft mechanics.
- Aircraft mechanics who sign maintenance releases require an Aircraft Maintenance Engineer's (AME) licence issued by Transport Canada.
- Aircraft inspectors require several years of experience as an aircraft mechanic.
- Aircraft inspectors require an Aircraft Maintenance Engineer's (AME) licence with endorsements for specific aircraft types and aircraft systems.

Additional information

- Aircraft mechanics may progress to foreman\woman or shop supervisor or, with an AME licence, to aircraft inspector.
- With experience, aircraft inspectors may progress to shop inspector.
- Aircraft inspectors may acquire further endorsements to their AME licence allowing them to inspect and certify a broader range of aircraft and aircraft systems.

- AME licences are issued in the following categories:

General Maintenance
M – Aircraft

Specialized Maintenance
E – Avionics Systems
S – Structures
P – Propulsion Systems

Classified elsewhere

- *Aircraft Assemblers and Aircraft Assembly Inspectors* (9481)
- Aircraft engine assemblers (in 7316 *Machine Fitters*)
- Aircraft mechanics and aircraft maintenance engineers specializing in maintaining electrical or avionics systems (in 2244 *Aircraft Instrument, Electrical and Avionics Mechanics, Technicians and Inspectors*)
- Government airworthiness inspectors (in 2262 *Engineering Inspectors and Regulatory Officers*)
- Supervisors of aircraft mechanics and aircraft inspectors (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7316 Machine Fitters

Machine Fitters fit, assemble and otherwise build heavy industrial machinery and transportation equipment, including aircraft engines. They are employed in industrial machinery and transportation equipment manufacturing industries.

Examples of titles classified in this unit group

Assembly Fitter
Aircraft Engine Fitter
Heavy Equipment Fitter
Machine Builder
Machine Fitter
Mechanical Fitter

Main duties

Machine Fitters perform some or all of the following duties:

- Read and interpret blueprints, sketches and diagrams to determine assembly operations
- Fit and assemble prefabricated metal parts to build heavy industrial machinery and equipment such as construction, farming, and processing machinery, railway vehicles and aircraft engines
- Move and align subassemblies and components using lifting and transporting devices such as overhead cranes
- Install major components such as gears, pumps, motors or hydraulic assemblies
- Inspect parts, subassemblies and finished products to ensure quality.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a mechanical apprenticeship program, such as millwrighting, machining, pipefitting, auto mechanics or heavy equipment repair
  or
  Five years of on-the-job training are usually required.
- Completion of a two to three-year college program in aircraft manufacturing or general fabrication is required for aircraft engine fitters.
- Certification in a related trade may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Mechanical Assemblers and Inspectors* (9486)
- *Welders* (7265)
- Aircraft assemblers (in 9486 *Mechanical Assemblers and Inspectors*)
- Assemblers of electrical industrial equipment (in 9485 *Assemblers, Fabricators and Inspectors, Industrial Electrical Motors and Transformers*)
- Supervisors of machine fitters (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7317 Textile Machinery Mechanics and Repairers

Textile Machinery Mechanics and Repairers install, maintain, repair, overhaul and set up textile machinery such as looms, knitting machines, spinning frames and carding machines. They are employed by textile manufacturing companies.

Examples of titles classified in this unit group

Card Fixer
Card Grinder
Fixer, Textile Machinery
Knitting Machine Mechanic
Loom Fixer
Loom Technician
Mechanic, Textile Machines
Open-end Technician
Spinning Fixer
Textile Fixer

Main duties

Textile Machinery Mechanics and Repairers perform some or all of the following duties:

- Repair and overhaul textile machinery
- Adjust and set up complex machinery for new patterns or products
- Perform routine adjustment and maintenance of textile machinery
- Recommend equipment changes or modifications and evaluate new equipment.

Employment requirements

- Completion of secondary school is usually required.
- Up to three years of on-the-job training
  or
  Several years of experience as a mechanic in other industries are usually required.
- Mechanics hired from other industries may require additional training in textile processes.
- Experience as a textile operator, such as weaver or tufting operator, may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Industrial mechanics or millwrights (in 7311 *Construction Millwrights and Industrial Mechanics (Except Textile)*)
- Supervisors of textile machinery mechanics and repairers (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7318 Elevator Constructors and Mechanics

Elevator Constructors and Mechanics assemble, install, maintain and repair freight and passenger elevators, escalators, moving walkways and other related equipment. They are employed by elevator construction and maintenance companies. Elevator constructor and mechanic apprentices are included in this unit group.

Examples of titles classified in this unit group

Elevator Constructor
Elevator Mechanic
Elevator Mechanic Apprentice
Escalator Repairer

Main duties

Elevator Constructors and Mechanics perform some or all of the following duties:

- Read and interpret blueprints to determine layout of system components
- Install elevators, escalators, moving walkways, dumbwaiters and related equipment according to specifications
- Install and wire electric control system devices
- Install, test and adjust safety control devices
- Test operation of newly installed equipment
- Troubleshoot electrical or mechanical systems failures
- Disassemble defective units and repair or replace worn or suspect parts
- Adjust valves, ratchets, seals, brake linings and other components
- Carry out preventative maintenance programs to ensure public safety.

Employment requirements

- Some secondary school education is required.
- Completion of a four to five-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some high school, college or industry courses in elevator construction or repair is usually required to be eligible for trade certification.
- Elevator constructor and mechanic trade certification is compulsory in Quebec and Alberta.
- There is no provincial apprenticeship program for elevator construction and repair in the other provinces and territories.

Additional Information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Supervisors of elevator constructors and mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7321 Motor Vehicle Mechanics, Technicians and Mechanical Repairers

Motor vehicle mechanics and technicians inspect, diagnose, repair and service mechanical, electrical and electronic systems and components of cars, buses and trucks. They are employed by motor vehicle dealers, garages and service stations, automotive specialty shops and retail establishments which have automotive service shops. This unit group also includes mechanical repairers who perform major repairs and replacement of mechanical units on newly assembled motor vehicles. They are employed by motor vehicle manufacturing companies. Motor vehicle mechanic apprentices are also included in this unit group.

Examples of titles classified in this unit group

Automobile Mechanic
Automotive Service Technician
Bus Mechanic
Car Mechanic
Mechanical Upgrader, Automobile Manufacturing
Motor Repairer, Automobile Manufacturing
Motor Vehicle Mechanic
Transmission Mechanic
Truck Mechanic
Tune-up Specialist, Motor Vehicle

Main duties

Motor vehicle mechanics and technicians perform some or all of the following duties:

- Review work orders and discuss work with supervisor
- Inspect motor in operation, road test motor vehicle, and test automotive systems and components using testing devices to diagnose and isolate faults
- Adjust, repair or replace parts and components of automotive systems including fuel, brake, steering and suspension systems, transmissions, differentials, drive axles and shafts, emission control and exhaust systems, engines and electrical, cooling and climate control systems using hand tools and other specialized automotive repair equipment
- Test and adjust repaired systems to manufacturer's performance specifications
- Perform scheduled maintenance service, such as oil changes, lubrications and tune ups
- Advise customers on work performed, general vehicle conditions and future repair requirements.

Motor vehicle mechanics may specialize in one of the following areas: engine and fuel systems, transmission systems, air conditioning, cooling and heating systems, brakes, drive lines, suspension, electrical and electronic systems or diagnostic services.

Mechanical repairers, motor vehicle manufacturing perform some or all of the following duties:

- Inspect and test mechanical units, such as engines, transmissions, axles and brake systems to locate faults and malfunctions
- Diagnose faults or malfunctions and confirm findings with supervisor to determine whether to repair or replace unit
- Repair or replace mechanical units or components using hand and power tools
- Test and adjust units to specifications for proper performance
- Complete reports to record problems and work performed.

Employment Requirements

Motor vehicle mechanics and technicians

- Completion of secondary school is usually required.
- Completion of a four-year motor vehicle mechanic apprenticeship program
  or
  A combination of over four years of work experience in the trade and high school, college or industry courses in automotive technology is required to be eligible for trade certification.
- Motor vehicle mechanic trade certification is compulsory in Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, Ontario and Alberta and available, but voluntary, in Manitoba, Saskatchewan, British Columbia, the Northwest Territories and the Yukon.

7321 Motor Vehicle Mechanics, Technicians and Mechanical Repairers

- Truck and transport mechanic trade certification is compulsory in Nova Scotia and available, but voluntary, in Prince Edward Island, New Brunswick, Saskatchewan and British Columbia.
- Interprovincial trade certification (Red Seal) is also available to qualified automobile mechanics and truck and transport mechanics.

Mechanical repairers, motor vehicle manufacturing

- Completion of secondary school is usually required.
- On-the-job training of two to three years is provided by employers.

Additional information

- Motor Vehicle Mechanic Red Seal trade certification allows for interprovincial mobility of motor vehicle mechanics.
- Truck and Transport Mechanic Red Seal trade certification allows for interprovincial mobility of truck and bus mechanics.
- With additional training, mobility is possible between automobile, truck and transport mechanics.
- With experience, motor vehicle mechanics may progress to supervisory positions.
- Mechanical repairers employed in motor vehicle manufacturing may progress to motor vehicle mechanic positions through an apprenticeship program, or with experience, they may progress to supervisory positions in motor vehicle manufacturing.

Classified elsewhere

- *Motor Vehicle Assemblers, Inspectors and Testers* (9482)
- *Motor Vehicle Body Repairers* (7322)
- Supervisors of automobile assembly metal repairers (in 9221 *Supervisors, Motor Vehicle Assembling*)
- Supervisors of motor vehicle mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7322 Motor Vehicle Body Repairers

Motor Vehicle Body Repairers repair and restore damaged motor vehicle body parts and interior finishing. They are employed by automobile dealers, automobile body repair companies and automobile appraisal centres. This unit group also includes metal repairers who repair defective automobile body parts and damage to the bodies of newly assembled cars. They are employed by motor vehicle manufacturers. Motor vehicle body repairer apprentices are included in this group.

Examples of titles classified in this unit group

Autobody Repairer
Automotive Body Mechanic
Automotive Body Technician
Body Repairer, Motor Vehicle
Metal Finisher, Motor Vehicle Manufacturing
Metal Repairer, Motor Vehicle Manufacturing
Motor Vehicle Body Technician
Painter, Motor Vehicle Repair

Main duties

Workers in this unit group perform some or all of the following duties:

- Review damage report and estimates of repair cost and plan work to be performed
- Repair and replace front end components, body components, doors and frame and underbody components
- Hammer out dents, buckles and other defects using blocks and hammers
- Operate soldering equipment or use plastic filler to fill holes, dents and seams
- Remove damaged fenders, panels and grills using wrenches and cutting torch and bolt or weld replacement parts into place
- Straighten bent frames using frame and underbody pulling and anchoring equipment
- File, grind and sand repaired body surfaces using hand and power tools
- Apply primers and repaint surfaces using brush or spray guns
- Repair or replace interior components, such as seat frame assembly, carpets and floorboard insulation
- Inspect repaired vehicles and test drive vehicles for proper handling.

Employment requirements

Motor Vehicle Body Repairers

- Completion of secondary school is usually required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over three years of work experience in the trade and completion of a high school or college automotive body repair program is usually required to be eligible for trade certification.
- Trade certification is compulsory in Newfoundland, Ontario and Alberta and available, but voluntary, in Nova Scotia, Prince Edward Island, New Brunswick, Manitoba, Saskatchewan, British Columbia, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified motor vehicle body repairers.

Metal Repairers, Motor Vehicle Manufacturing

- Completion of secondary school may be required.
- On-the-job training in body repair of one to two years is provided by employers.

7322 Motor Vehicle Body Repairers

Additional information

- Red Seal trade certification allows for interprovincial mobility of motor vehicle body repair tradespersons.
- With experience, motor vehicle body repair tradespersons may progress to supervisory positions.
- Metal repairers employed in motor vehicle manufacturing may progress to motor vehicle repairer positions through an apprenticeship program, or, with experience, they may progress to supervisory positions in motor vehicle manufacturing.

Classified elsewhere

- Motor vehicle mechanics (in 7321 *Motor Vehicle Mechanics, Technicians and Mechanical Repairers*)
- Supervisors of motor vehicle body repairers (in 7216 *Contractors and Supervisors, Mechanic Trades*)
- Supervisors of automobile manufacturing metal repairers (in 9221 *Supervisors, Motor Vehicle Assembling*)

7331 Oil and Solid Fuel Heating Mechanics

Oil and Solid Fuel Heating Mechanics install and maintain oil, coal and wood heating systems in residential and commercial buildings. They are employed by heating systems installation and service companies. Oil and solid fuel heating mechanic apprentices are included in this unit group.

Examples of titles classified in this unit group

Heating System Mechanic
Heating Technician
Oil Burner Apprentice
Oil Burner Installer
Oil Burner Mechanic
Wood Burner Installer

Main duties

Oil and Solid Fuel Heating Mechanics perform some or all of the following duties:

- Read and interpret drawings or specifications to determine work to be performed
- Lay out oil burner heating system components and assemble components using hand and power tools
- Position, install and connect oil burner components such as control devices and thermostats to motors and electric power outlets
- Test installed unit and adjust controls for proper functioning
- Toubleshoot and repair malfunctioning oil burners
- Install, maintain and repair coal and wood heating systems
- Perform scheduled maintenance service on oil and solid fuel heating systems.

Employment requirements

- Some secondary school education is usually required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some college or industry courses in heating systems installation and repair is usually required for trade certification.
- Trade certification is available, but not compulsory, in Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, British Columbia, the Northwest Territories and the Yukon.
- Interprovincial trade certification (Red Seal) is also available to qualified oil and solid fuel heating mechanics.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification allows for interprovincial mobility.

Classified elsewhere

- *Refrigeration and Air Conditioning Mechanics* (7313)
- Supervisors of oil and solid fuel heating mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7332 Electric Appliance Servicers and Repairers

Electric Appliance Servicers and Repairers service and repair domestic electrical appliances. They are employed by repair shops, appliance service companies and repair departments of retail and wholesale establishments. Apprentices are included in this unit group.

Examples of titles included in this unit group

Appliance Repairer Apprentice
Appliance Servicer
Appliance Service Technician
Dishwasher Repairer
Refrigerator Repairer
Service Technician
Stove Repairer
Vacuum Cleaner Repairer
Washing Machine Servicer

Main duties

Small appliance repairers perform some or all of the following duties:

- Repair small appliances, such as electrical lawn and garden equipment and power tools
- Consult customer or refer to work order to establish nature of the appliance malfunction
- Observe operation of appliance and conduct voltage, resistance and other tests using electrical test equipment
- Refer to schematic drawings or product manuals and replace or repair parts or components using hand tools and soldering equipment
- Prepare estimates and written accounts of work performed.

Major appliance repairers/technicians perform some or all of the following duties:

- Repair major appliances, such as domestic refrigerators and window air conditioners, in customer's home during service calls or in repair shop
- Consult customer or refer to work order to establish nature of the appliance malfunction
- Diagnose faults by checking controls, condensers, timer sequences, fans and other components using test equipment such as meters and gauges to measure resistance, current, voltage and pressure
- Refer to schematic diagrams or product manuals and disassemble appliance using hand tools
- Replace components and subcomponents and reassemble appliance using hand tools and soldering and brazing equipment
- Prepare estimates and written accounts of work performed
- Plan service routes.

Employment requirements

- Small appliance repairers usually require some specialized college or high school courses or several months of on-the-job training.
- Major appliance service/repair technicians require some secondary school education and completion of a college program in appliance repair
  or
  Completion of a three-year apprenticeship program in appliance repair.
- Appliance repair trade certification is compulsory in Alberta and available, but voluntary, in New Brunswick and the Northwest Territories.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Electronic Service Technicians (Household and Business Equipment)* (2242)
- Supervisors of electrical appliance servicers and repairers (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7333 Electrical Mechanics

Electrical Mechanics maintain, test and repair electric motors, transformers, switchgears and other electrical apparatus. They are employed by independent electrical repair shops, service shops of electrical equipment manufacturers and maintenance departments of manufacturing companies. Electrical mechanic apprentices are included in this unit group.

Examples of titles classified in this unit group

Armature Winder Repairer
Coil Winder and Repairer
Electric Motor Repairer
Electrical Mechanic
Electrical Transformer Repairer
Industrial Motor Winder Repairer
Power Transformer Repairer
Transformer Repairer

Main duties

Electrical Mechanics perform some or all of the following duties:

- Test and observe electrical and mechanical conditions of electric motors, transformers, switchgears or other electrical equipment using testing and measuring instruments
- Troubleshoot and repair electric motors, transformers, switchgears, generators and other electrical equipment
- Replace or recondition shafts, bearings, commutators and other components
- Wind, assemble and install various types of coils for electric motors or transformers
- Perform static or dynamic balancing of armatures or rotors by welding, brazing or soldering electrical connections and by aligning and adjusting parts
- Test and repair or replace faulty wiring or components in electrical switchgears
- Test repaired motors, transformers, switchgears or other electrical apparatus to ensure proper performance
- Perform some machining to recondition or modify shafts, commutators or other parts
- Perform on-site servicing and repair.

Electrical mechanics may specialize in working with certain types of apparati, such as electric motors or transformers, or in performing certain functions, such as winding coils.

Employment requirements

- Completion of secondary school may be required.
- Completion of a three to four-year apprenticeship program
  or
  A combination of over four years of work experience in the trade and some college or industry courses in electrical mechanics is usually required for trade certification.
- Trade certification as an electrical mechanic or electric motor winder is available, but not compulsory, in New Brunswick, Manitoba, Alberta, British Columbia and the Yukon.

Additional information

- Although specialization may occur, workers in this unit group are expected to be proficient in repairing all electrical apparati.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Assemblers, Fabricators and Inspectors, Industrial Electrical Motors and Transformers* (9485)
- *Industrial Electricians* (7242)
- Aircraft electrical mechanics (in 7315 *Aircraft Mechanics and Aircraft Inspectors*)
- Supervisors of electrical mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7334 Motorcycle and Other Related Mechanics

Mechanics in this unit group test, repair and service motorcycles, motor scooters, snowmobiles, forklifts and all-terrain vehicles. They are employed by service shops of motorcycle dealers and retailers and by independent service establishments. Motorcycle mechanic apprentices are included in this unit group.

Examples of titles classified in this unit group

All-Terrain Vehicle Repairer
Motorcycle Mechanic
Motor Scooter Repairer
Snowmobile Repairer

Main duties

Mechanics in this unit group perform some or all of the following duties:

- Review work orders and discuss work to be performed with supervisor
- Inspect and test engine and other mechanical components using test devices to diagnose and isolate faults
- Adjust, repair or replace mechanical or electrical system parts and components using hand tools and equipment
- Test and adjust repaired systems for proper performance
- Perform scheduled maintenance service on equipment
- Advise customers on work performed and general condition of equipment
- Determine estimates of repair cost.

Employment requirements

- Some secondary school education is usually required.
- For motorcycle mechanics, completion of a three to four-year apprenticeship program
  or
  A combination of over three years of work experience in the trade and some high school or college courses in motorcycle repair is usually required to be eligible for trade certification.
- Motorcycle mechanic trade certification is compulsory in Ontario and Alberta and available, but voluntary, in British Columbia.
- Other mechanics in this unit group may require several years of on-the-job training.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Other Small Engine and Equipment Mechanics* (7335)
- Supervisors of motorcycle and related equipment mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7335 Other Small Engine and Equipment Mechanics

Mechanics in this unit group test, repair and service small gasoline and diesel-powered equipment, such as garden tractors, outboard motors, lawn mowers and other related equipment. They are employed by dealer service shops and by independent service establishments. Small engine and equipment mechanic apprentices are included in this unit group.

Examples of titles classified in this unit group

Air-Cooled Engine Mechanic
Lawn Mower Repairer, Gasoline Powered
Motor Boat Mechanic
Outboard Motor Mechanic
Small Engine Repairer
Small Equipment Mechanic Apprentice
Small Equipment Repairer

Main duties

Mechanics in this unit group perform some or all of the following duties:

- Review work orders and discuss work to be performed with supervisor
- Inspect and test engine, motors and other mechanical components using test devices to diagnose and isolate faults
- Adjust, repair or replace mechanical or electrical system parts and components using hand tools and equipment
- Test and adjust repaired equipment for proper performance
- Perform scheduled maintenance service on equipment
- Advise customers on work performed and general condition of equipment
- Determine estimates of repair cost.

Employment requirements

- Some secondary school education is usually required.
- Completion of a three to four-year apprenticeship program in small engine or equipment repair
  or
  A combination of several years of work experience in the trade and some high school or college courses in small engine or equipment repair is usually required for trade certification.
- Small engine or equipment mechanic trade certification is available, but not compulsory, in Newfoundland, Prince Edward Island, New Brunswick, Ontario, British Columbia and the Northwest Territories.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Motorcycle and Other Related Mechanics* (7334)
- Supervisors of small engine and equipment mechanics (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7341 Upholsterers

Upholsterers cover furniture, fixtures and similar items with fabric, leather or other upholstery materials. They are employed by furniture, aircraft, motor vehicle and other manufacturing companies, furniture repair shops or they may be self-employed.

Examples of titles classified in this unit group

Aircraft Upholsterer
Automobile Upholsterer
Custom Upholsterer
Furniture Upholsterer
Upholsterer
Upholstery Repairer

Main duties

Upholsterers perform some or all of the following duties:

- Discuss upholstery fabric, colour, and style with customers and provide cost estimate for upholstering furniture or other items
- Lay out, measure and cut upholstery materials according to sketches or design specifications
- Replace worn-out webbing, springs and other furniture parts using hand and power tools
- Operate sewing machines or sew upholstery materials by hand to seam cushions and join sections of covering materials
- Install padding and underlays and fasten covering materials to furniture frames
- Tack, glue or sew ornamental trim, braids or buttons on upholstered items
- Lay out, cut, fabricate and install upholstery in aircrafts, motor vehicles, railway cars, boats and ships
- May repair furniture frames and refinish wood surfaces
- May make upholstery patterns from sketches, customer descriptions or blueprints.

Employment requirements

- Some secondary school education is usually required.
- Completion of college or other specialized courses or program in furniture upholstering and repair
  or
  Several years of on-the-job training, including working as an upholsterer helper, is usually required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Furniture and Fixture Assemblers and Inspectors* (9492)
- *Furniture Finishers and Refinishers* (9494)
- Upholsterer helpers (in 9619 *Other Labourers in Processing, Manufacturing and Utilities*)
- Supervisors of upholsterers in furniture manufacturing (in 9224 *Supervisors, Furniture and Fixtures Manufacturing*)

7342 Tailors, Dressmakers, Furriers and Milliners

Tailors, dressmakers and furriers make, alter and repair tailored clothing, dresses, coats and other made-to-measure garments. Milliners make, alter and repair hats. This unit group also includes seamstresses who fit, alter and repair garments. They are employed by clothing retailers, clothing alteration shops and garments manufacturing companies or they may be self-employed.

Examples of titles classified in this unit group

Alterations Dressmaker
Custom Furrier
Custom Tailor
Dressmaker
Furrier
Milliner
Seamstress
Tailor

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Tailors and dressmakers make made-to-measure garments, such as suits, dresses and coats according to customers' and clothing manufacturers' specifications and fit, alter and repair garments as required.
- Furriers make, alter, restyle and repair natural fur garments and accessories.
- Milliners design, lay out, cut, sew and press fabric, leather and other materials into hats and related. accessories.
- Seamstresses fit, alter and repair garments according to customers' requests by hand or using sewing machines.

Employment requirements

- Completion of secondary school may be required.
- Tailors and dressmakers require demonstrated ability to sew, style and fit men's or women's garments and may require completion of college or other courses in tailoring or dressmaking.
- Furriers require several years of experience in selecting pelts and making, fitting, styling and altering fur garments and accessories.
- Milliners require demonstrated ability to sew, style and fit hats and caps.
- Seamstresses require demonstrated ability to sew, alter and repair garments.

Classified elsewhere

- *Machine Operators and Related Workers in Fabric, Fur and Leather Products Manufacturing* (945)

7343 Shoe Repairers and Shoemakers

Shoe repairers repair footwear and shoemakers make specialized and custom shoes and boots. They are employed in shoe repair shops or custom shoemaking establishments or may be self-employed.

Examples of titles classified in this unit group

Bootmaker
Custom Shoemaker
Orthopaedic Shoemaker
Shoe Repairer
Shoemaker

Main duties

Shoemakers perform some or all of the following duties:

- Discuss type of footwear to be made and obtain measurements from customer
- Select patterns and leather or other material and outline and cut patterns
- Select or assemble lasts, fasten insoles to lasts and sew or glue other parts into place
- Trim, dress and otherwise finish boots or shoes
- Estimate custom footwear costs and receive payment from customers
- May supervise other shoemakers and shoe repairers.

Shoe repairers perform some or all of the following duties:

- Repair soles, heels and other parts of footwear using sewing, buffing and other shoe repair machines, materials and equipment
- Repair belts, luggage, purses and similar products
- Estimate footwear repair costs and take payment.

Employment requirements

- Some secondary school may be required.
- Several months on-the-job training is provided for shoe repairers.
- Extensive on-the-job training is provided for shoemakers.
- Shoemakers may require experience as shoe repairers.

Additional information

- Shoe repairers may progress to shoemakers with experience.

Classified elsewhere

- Labourers in shoe manufacturing (in 9619 *Other Labourers in Processing, Manufacturing and Utilities*)
- Workers who cut fabric or leather to form shoe parts on a production basis (in 9452 *Fabric, Fur and Leather Cutters*)
- Workers who operate sewing machines to make shoes on a production basis (in 9451 *Sewing Machine Operators*)

7344 Jewellers, Watch Repairers and Related Occupations

Jewellers and related workers in this unit group fabricate, assemble, repair and appraise fine jewellery. Watch repairers and related workers in this unit group repair, clean, adjust and fabricate parts for clocks and watches. They are employed by jewellery, clock and watch manufacturers and retail stores, by jewellery and watch repair shops or they may be self-employed.

Examples of titles classified in this unit group

Clock Repairer
Diamond Cutter
Gem Cutter
Gemologist
Pearl Cutter
Precious Stone Setter
Watch Repairer
Watchmaker

Main duties

Jewellers and related workers perform some or all of the following duties:

- Fabricate and repair precious and semi-precious metal jewellery, such as rings, brooches, pendants, bracelets and lockets
- Examine, cut, shape and polish diamonds using optical instruments, lathes and laps
- Examine, cut, shape and polish precious and synthetic gems using optical instruments, cutting disks and laps
- Appraise gemstones and diamonds to differentiate between stones, identify rare specimens and to detect peculiarity affecting stone values
- Set precious and semi-precious stones in jewellery mountings, according to specifications
- May supervise other jewellers.

Watch repairers perform some or all of the following duties:

- Fabricate or fit parts to make watches and clocks
- Examine clocks and watches and perform repairs or adjustments as required
- Test, adjust and regulate timepiece movements
- Clean, polish and lubricate timepiece and other parts
- May supervise other watch repairers.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a college or other program, or apprenticeship training in watch or jewellery repair is usually required.
- A watch repairer certificate is compulsory in Quebec and Ontario.
- Experience as a jewellery, clock or watch assembler may be required.

Additional information

- Mobility is possible among the various jewellery occupations in this unit group.
- There is little mobility between the jewellery occupations and the watch repairers in this unit group.

Classified elsewhere

- Jewellery and clock and watch production assemblers (in 9498 *Other Assemblers and Inspectors*)
- Silversmiths and jewellery artisans (in 5244 *Artisans and Craftspersons*)

7351 Stationary Engineers and Auxiliary Equipment Operators

Stationary Engineers and Auxiliary Equipment Operators operate and maintain various types of stationary engines and auxiliary equipment such as boilers, turbines, generators, compressors and other equipment to provide heat, ventilation, refrigeration, light and power for buildings, industrial plants and other work sites. They are employed in industrial and manufacturing plants, hospitals, universities, government and commercial establishments.

Examples of titles classified in this unit group

Auxiliary Plant Operator
Boiler Operator
Power Engineer
Power Engineer Apprentice
Stationary Engineer
Stationary Engineer Apprentice
Steam Plant Operator

Main duties

Stationary Engineers and Auxiliary Equipment Operators perform some or all of the following duties:

- Operate automated or computerized control systems, stationary engines and auxiliary equipment such as boilers, turbines, generators, compressors and other equipment to provide heat, ventilation, refrigeration, light and power for buildings, industrial plants and other work sites
- Monitor and inspect plant equipment, switches, valves, gauges, alarms, meters and other instruments to measure temperature, pressure and fuel flow, to detect leaks or other equipment malfunctions and to ensure plant equipment is operating normally
- Analyze and record instrument readings and equipment malfunctions
- Make adjustments or minor repairs as required
- Clean and lubricate generators, turbines, pumps and compressors and perform other routine equipment maintenance duties using appropriate lubricants and hand tools.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a regulated apprenticeship program in stationary or power engineering
  or
  On-the-job training and correspondence courses, high school courses or a college training program in stationary or power engineering is required.
- Provincial or territorial certification according to class (4th, 3rd, 2nd and 1st class and an additional 5th class in Manitoba, Saskatchewan and the Northwest Territories) is required.

Additional information

- Progression from lower to higher classes for stationary or power engineers is dependent on further training and experience.

Classified elsewhere

- *Power Systems and Power Station Operators* (7352)
- Professional engineers (in 213 *Civil, Mechanical, Electrical and Chemical Engineers* and 214 *Other Engineers*)
- Supervisors of stationary engineers and auxiliary equipment operators (in 9212 *Supervisors, Petroleum, Gas and Chemical Processing and Utilities*)

7352 Power Systems and Power Station Operators

Power systems operators monitor and operate switchboards and related equipment in electrical control centres to control the distribution of electrical power in transmission networks. Power station operators operate reactors, turbines, boilers, generators and other related equipment in electrical generating stations and substations. They are employed by electric power utilities and by some large manufacturing facilities.

Examples of titles classified in this unit group

Apprentice Power Dispatcher
Chief Operator, Area Dispatch
Distribution Control Operator
Diesel Station Operator
Generating Station Operator
Nuclear Reactor Operator
Power Dispatcher
Power System Operator
Power Plant Operator

Main duties

Power systems operators perform some or all of the following duties:

- Monitor and operate computerized or pneumatic controlled switchboards and auxiliary equipment in electrical control centres to control the distribution and to regulate the flow of electrical power in the transmission network
- Co-ordinate, schedule and direct generating station and substation power loads and line voltages to meet distribution demands during daily operations, system outages, repairs and importing or exporting of power
- Monitor and visually inspect station instruments, meters and alarms to ensure transmission voltages and line loadings are within prescribed limits and to detect equipment failure, line disturbances and outages
- Issue work and test permits to electrical and mechanical maintenance personnel, and assist maintenance and technical personnel to locate and isolate system problems and assist during routine system testing
- Complete and maintain station records, logs and reports.

Power station operators perform some or all of the following duties:

- Operate reactors, turbines, boilers, generators, condensers and auxiliary equipment in hydro, thermal and nuclear power plants to generate electrical power
- Start up and shut down power plant equipment, control switching operations, regulate water levels and communicate with systems operators to regulate and co-ordinate transmission loads, frequency and line voltages
- Monitor and visually inspect power plant equipment and equipment indicators to detect operating problems and make adjustments or minor repairs as required
- Complete and maintain station records, logs and reports.

Employment requirements

- Completion of secondary school is usually required for power systems and power station operators.
- Power systems operators require completion of a three to five year power system operator apprenticeship program
  or
  Over three years of work experience in the trade and some college or industry courses in electrical and electronic technology.
- Trade certification is available but not mandatory for power system operators in Newfoundland.
- Power station operators require an apprenticeship program in stationary or power engineering
  or
  Several years of work experience in the trade and some high school, correspondence or college courses in stationary or power engineering.
- Power station operators require a provincial or territorial power engineering or stationary engineering certificate according to class.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Stationary Engineers and Auxiliary Equipment Operators* (7351)
- Supervisors of power system and power station operators (in 9212 *Supervisors, Petroleum, Gas and Chemical Processing and Utilities*)

7361 Railway and Yard Locomotive Engineers

Railway locomotive engineers operate railway locomotives to transport passengers and freight. They are employed by railway transport companies. Yard locomotive engineers operate locomotives within yards of railway, industrial or other establishments. They are employed by railway transport companies and industrial or commercial users of rail transport.

Examples of titles classified in this unit group

Freight Railway Engineer
Locomotive Engineer, Railway
Railway Engineer
Railway Hostler
Switch Engineer
Yard Engineer, Railway

Main duties

Railway locomotive engineers perform some or all of the following duties:

- Operate locomotives to transport passengers and freight on railways
- Operate communication systems to communicate with train crews and traffic controllers to ensure safe operation and scheduling of trains
- Inspect assigned locomotives and test operating controls and equipment.

Yard locomotive engineers perform some or all of the following duties:

- Operate locomotives to switch, couple and uncouple cars for loading and unloading
- Perform switching operations according to written switching orders or dispatched instructions
- Inspect locomotives, replenish fuel or perform routine maintenance on locomotives.

Employment requirements

- Completion of secondary school is usually required.
- Experience as a conductor is required for railway locomotive engineers and may be required for yard locomotive engineers.
- Experience as a railway yard worker may be required for yard locomotive engineers.
- Level "A" Certificate of the Canadian Rail Operating Rules is required for railway locomotive engineers.

Additional information

- Mobility between railway transport companies or between establishments employing locomotive engineers may be limited due to seniority provisions of collective agreements.

Classified elsewhere

- *Supervisors, Railway Transport Operations* (7221)

7362 Railway Conductors and Brakemen/women

Railway conductors co-ordinate and supervise the activities of passenger and freight train crew members. Brakemen/women check train brakers and other systems and equipment prior to train run, and assist railway conductors in activities en route. They are employed by railway transport companies.

Examples of titles classified in this unit group

Brakeman/woman
Freight Train Conductor
Front-end Brakeman/woman
Passenger Train Conductor
Railway Conductor
Road Freight Brakeman/woman
Trail-end Brakeman/woman
Train Conductor

Main duties

Railway conductors perform some or all of the following duties:

- Supervise and co-ordinate the activities of passenger and freight train crew members (except locomotive engineers) to ensure train operations are in accordance with schedule, train orders and code of operating rules
- Receive train orders and explain orders to brakemen/women, locomotive engineer and other crew members
- Communicate with train crew members by radio, signals or by other means to give and receive train operation information
- Collect fares on board passenger trains, announce approaching train stops and answer passenger enquiries
- Prepare train run reports.

Brakemen/women perform some or all of the following duties:

- Check train systems and equipment such as air conditioning and heating systems, brakes and brake hoses prior to train run
- Communicate with train crew members by radio, signals or by other means to aid in the movement and operation of train
- Receive orders from traffic controllers, observe signals and track conditions and open and close track switches
- Set and release hand brakes and connect air brake hoses to couple and switch passenger or freight cars, making minor repairs to couplings, air hoses and wheel-bearing boxes as required
- Assist in collecting fares and helping passengers on and off train.

Employment requirements

- Completion of secondary school is usually required.
- Experience as a brakeman/woman is required for conductors.
- Experience as a railway worker is usually required for brakemen/women.
- Level "A" Certificate of the Canadian Rail Operating Rules is required for railway conductors.
- Level "B" Certificate of the Canadian Rail Operating Rules is required for brakemen/women.

Additional information

- With experience, brakemen/women may progress to railway conductors.
- With experience, railway conductors may progress to locomotive engineers.

Classified elsewhere

- *Railway and Yard Locomotive Engineers* (7361)
- *Supervisors, Railway Transport Operations* (7221)

7371 Crane Operators

Crane Operators operate cranes or draglines to lift, move, position or place machinery, equipment and other large objects at construction or industrial sites, ports, railway yards and other similar locations. They are employed by construction, industrial, cargo handling and railway companies. Crane operator apprentices are included in this unit group.

Examples of titles classified in this unit group

Boom Truck Crane Operator
Bridge Crane Operator
Climbing Crane Operator
Construction Crane Operator
Crane Operator
Dragline Crane Operator
Gantry Crane Operator
Mobile Crane Operator
Tower Crane Operator
Tractor Crane Operator

Main duties

Crane Operators perform some or all of the following duties:

- Operate mobile and tower cranes to lift, move, position or place equipment and materials at construction sites, shipyards, industrial yards and similar locations
- Operate pile driving cranes to drive pilings into earth to provide support for buildings and other structures
- Operate cranes equipped with dredging attachments to dredge waterways and other areas
- Operate gantry cranes to load and unload ship cargo at port side
- Operate locomotive cranes to move objects and materials at railway yards
- Operate bridge or overhead cranes to lift, move and place plant machinery and materials
- Operate offshore oil rig cranes to unload and reload supply vessels
- Operate cranes mounted on boats or barges to lift, move and place equipment and materials
- Perform routine maintenance work such as cleaning and lubricating cranes.

Employment requirements

- Some secondary school education is required.
- Completion of a one to three-year apprenticeship program
  or
  High school, college or industry courses in crane operating are usually required.
- Trade certification as a general crane operator is compulsory in Quebec and available, but voluntary, in Newfoundland, Saskatchewan and British Columbia.
- Boom truck crane operator trade certification is compulsory in Alberta.
- Mobile crane operator trade certification is compulsory in Ontario and Alberta.
- Tower crane operator trade certification is compulsory in Ontario, Alberta and British Columbia.
- Mobile crane operators may require a provincial licence to drive mobile cranes on public roads.
- Internal company certification as a crane operator may be required by some employers.
- Interprovincial trade certification (Red Seal) is also available to mobile crane operators.

Additional information

- Progression to supervisory positions is possible with experience.
- Red Seal trade certification for mobile crane operators allows for interprovincial mobility.

Classified elsewhere

- *Heavy Equipment Operators (Except Crane)* (7421)
- Supervisors of crane operators (in 7217 *Contractors and Supervisors, Heavy Construction Equipment Crews*)

7372 Drillers and Blasters — Surface Mining, Quarrying and Construction

Drillers in this unit group operate mobile drilling machines to bore blast holes in open-pit mines and quarries and to bore holes for blasting and for building foundations at construction sites. Blasters in this unit group fill blast holes with explosives and detonate explosives to dislodge coal, ore and rock or to demolish structures. They are employed by mining, quarrying and construction companies and by drilling and blasting contractors.

Examples of titles classified in this unit group

Blaster, Construction
Blaster, Surface Mining
Construction Blaster
Construction Driller
Driller, Construction
Foundation Drill Operator
Open-pit Blaster
Open-pit Driller
Rotary Drilling Machine Operator

Main duties

Drillers in this unit group perform some or all of the following duties:

- Drive and operate tracked or truck-mounted rotary drilling, air-track or other drilling machines to bore large blast holes to specified depths at staked positions in open-pit mine or quarry
- Operate drilling machines to drill blast holes in rock at road or other construction sites
- Operate tracked or truck mounted drill equipped with auger or other attachment to drill holes for building foundations or pilings
- May measure location and stake out pattern of holes to be drilled, load blast holes with explosives and detonate explosives to dislodge coal, ore or rock.

Blasters in this unit group perform some or all of the following duties:

- Read instructions or diagrams, lay out drill pattern and determine depth and diameter of blast holes and conduct field tests to determine the type and quantity of explosives required
- Assemble or direct other workers to assemble primer charges using selected detonators, fuses, detonating cords and other materials
- Load explosives in blast holes by hand or direct the movement of bulk explosives trucks to load holes
- Connect electrical wires, detonating cords or fuses into series and connect series to blasting machines; press handle or button to detonate charges
- Handle, store and transport explosives and accessories in accordance with regulations and ensure that safety procedures are observed
- May operate air-track, rotary, down-the-hole or other drilling machines to drill blast holes or may direct drilling of blast holes.

Employment requirements

- Some secondary school education is required.
- On-the-job training is provided.
- Experience as a heavy equipment operator may be required for drillers.
- Experience as a blaster helper in surface mining and quarrying or construction may be required for blasters.
- Provincial blasting licence is usually required for blasters.

Additional information

- Progression to supervisory positions is possible with experience.
- Drillers and blasters often perform both drilling and blasting activities.

Classified elsewhere

- *Water Well Drillers* (7373)
- Oil and gas well drillers (in 8232 *Oil and Gas Well Drillers, Servicers, Testers, and Related Workers*)
- Supervisors of construction drillers and blasters (in 7217 *Contractors and Supervisors, Heavy Construction Equipment Crews*)
- Supervisors of surface mining drillers and blasters (in 8221 *Supervisors, Mining and Quarrying*)
- Underground mine drillers and blasters (in 8231 *Underground Production and Development Miners*)

7373 Water Well Drillers

Water Well Drillers operate a variety of mobile water well drilling rigs and equipment to drill residential, commercial and industrial water wells. They are employed by water well drilling contractors, governments or they may be self-employed. Water well driller apprentices are included in this unit group.

Examples of titles classified in this unit group

Cable Tool Driller – Water Well
Churn Drill Operator – Water Well
Water Well Driller
Water Well Driller Apprentice

Main duties

Water Well Drillers perform some or all of the following duties:

- Review client requirements and proposed locations for water wells
- Operate water well drilling rigs and other equipment to drill, bore and dig for residential, commercial and industrial water wells and install well screens, casings and other well fixtures
- Perform routine mechanical maintenance work on water well drilling rigs and equipment
- Install, test, maintain and repair water well pumps, piping systems and equipment and perform pumping tests to assess well performance
- May provide other drilling services, such as repair or dismantling of existing water well structure, elevator shaft drilling and hydro pole drilling.

Water well drillers may specialize in a specific method of drilling, such as cable, rotary, auger, hammer or reverse circulation drilling.

Employment requirements

- Some secondary school education is usually required.
- Completion of a two to three-year water well drilling apprenticeship program
  or
  Two to three years of work experience in the trade combined with college or industry courses in water well drilling is usually required to be eligible for trade certification.
- Trade certification is compulsory in New Brunswick and available, but voluntary, in Alberta and British Columbia.

Additional information

- Mobility is possible among the various well drilling operators in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Surface mining, quarrying and construction drillers (in 7372 *Drillers and Blasters – Surface Mining, Quarrying and Construction*)
- Water well drilling contractors and supervisors of water well drillers (in 7217 *Contractors and Supervisors, Heavy Construction Equipment Crews*)

7381 Printing Press Operators

Printing Press Operators set up and operate sheet and web-fed presses to print illustrations, designs and text on paper, plastic, sheet metal and other material. They are employed by commercial printing companies; newspapers, magazines, and other publishing companies and establishments in the public and private sectors that have in-house printing departments.

Examples of titles classified in this unit group

Apprentice Pressman/woman
Assistant Pressman/woman
First Pressman/woman
Flexographic Press Operator
Offset Press Operator
Printing Press Operator
Rotogravure Pressman/woman – Printing

Main duties

Printing Press Operators perform some or all of the following duties:

- Review job orders to determine job specifications such as production time, colour sequence and quantities required, and advise press crew of these specifications
- Mount plates or cylinders and make necessary adjustments
- Fill ink fountains and make measurements, adjustments and settings to control colour and viscosity
- Operate press at slow speed to check samples for ink coverage, alignment and registration
- Monitor regular press run for quality consistency and make adjustments if required
- Remove and clean plates and cylinders at end of press run
- Set up and adjust in-line binding and finishing equipment
- May direct press crew to set up, operate and shut down a large press.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a college program in printing technology
  or
  A four-year apprenticeship program in printing
  or
  A combination of on-the-job training and specialized high school, college or industry courses is usually required.
- Trade certification is available, but not compulsory, in Ontario, Alberta and the Northwest Territories.

Additional information

- Progression to supervisory positions, such as pressroom supervisor, is possible with experience.

Classified elsewhere

- *Supervisors, Printing and Related Occupations* (7218)
- Operators of laser printers, computerized high speed colour copiers and printing machines (in 9471 *Printing Machine Operators*)
- Screen printing artisans (in 5244 *Artisans and Craftspersons*)
- Textile printers (in 9443 *Textile Dyeing and Finishing Machine Operators*)

7382 Commercial Divers

Commercial Divers perform underwater activities related to construction, inspection, search, salvage, repair and photography. They are employed by commercial diving contractors, shipping and marine construction companies, and oil and gas companies with offshore operations.

Examples of titles classified in this unit group

Commercial Diver
Diver
Offshore Diver
Skin Diver, Commercial
Underwater Contractor
Underwater Welder
Underwater Worker

Main duties

Commercial Divers perform some or all of the following duties:

- Perform offshore oil and gas exploration and extraction duties such as underwater surveys, nondestructive testing, blasting and construction
- Operate underwater video, sonar, recording and related equipment for scientific or exploratory purposes
- Inspect vessels, buoyage systems, pipelines, sluice gates, plant intakes and outfalls and other materials visually and by nondestructive testing
- Perform construction duties such as welding and installing pilings for cofferdams or footings for piers, and maintain these and other structures using hand and power tools and pneumatic equipment
- Operate winches, derricks or cranes to manipulate cables and chains to raise sunken objects
- Set up and detonate explosives to remove obstructions and break up or refloat submerged objects
- Participate in search and rescue, salvage, recovery and clean up operations
- Check and maintain diving equipment such as helmets, masks, air tanks, harnesses and gauges
- May supervise and train other divers.

Employment requirements

- Completion of secondary school education is usually required.
- Completion of a recognized commercial diving school program is required.
- Military or police diving experience may be required.
- A Category I commercial diver's licence issued by National Energy Board (NEB) or its equivalent is required.
- A provincial blaster's licence is usually required for the setting and detonation of explosives.

7383 Other Trades and Related Occupations

This unit group includes tradespersons and related skilled workers, not elsewhere classified, who repair, service, install, calibrate or fabricate a variety of products. They are employed by a wide range of establishments or they may be self-employed.

Examples of titles classified in this unit group

Aircraft Patternmaker
Gunsmith
Locksmith
Recreation Vehicle Repairer
Safe and Vault Servicer
Saw Fitter
Small Arms Repairer
Streetcar Mechanic
Template Maker

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Gunsmiths fabricate guns and repair and modify firearms according to blueprints or customers' specifications.
- Locksmiths repair, install and adjust locks, make keys and change lock combinations.
- Recreation vehicle repairers repair or replace electrical wiring, plumbing, propane gas lines, windows, doors, cabinets and structural frames in recreational vehicles.
- Safe and vault servicers install, repair and maintain safes and vaults in banks and other establishments.
- Saw fitters repair, set and sharpen bandsaws, chainsaws, circular saws and other types of saw blades according to specifications.

Employment requirements

- Some secondary school education is required.
- Completion of a two to three-year apprenticeship program in a relevant trade, such as locksmith, recreation vehicle mechanic or saw repair
  or
  College, high school or industry courses combined with several years of related work experience
  or
  Several years of on-the-job training are required.
- Provincial trade certification or license may be required for some occupations in this unit group.

Additional information

- There is little or no mobility among occupations in this unit group.
- Progression to supervisory positions is possible with experience.

7411 Truck Drivers

Truck Drivers operate heavy trucks to transport goods and materials over urban, interurban, provincial and international routes. They are employed by transportation companies, manufacturing and distribution companies, moving companies or they may be self-employed.

Examples of titles classified in this unit group

Bulk Goods Truck Driver
Dump Truck Driver
Flatbed Truck Driver
Logging Truck Driver
Long Haul Truck Driver
Moving Van Driver
Tow Truck Driver
Truck Driver
Truck Driver, Heavy Truck
Truck Driver, Tractor-trailer

Main duties

Truck Drivers perform some or all of the following duties:

- Operate and drive straight or articulated trucks weighing over 4,600 kg with three or more axles to transport goods and material to destinations
- Oversee all functions of vehicles, such as condition of equipment, loading and unloading, and safety and security of cargo
- Obtain special permits and other documents required to transport cargo on international routes
- Record cargo information, distance travelled, fuel consumption and other information in log book or on on-board computer
- Receive and relay information to central dispatcher
- May drive as part of a team or convoy
- May transport hazardous products or dangerous goods
- May drive lighter, special purpose trucks.

Employment requirements

- Some secondary school education is usually required.
- On-the-job training is provided.
- A driver's licence appropriate to the class of vehicle being driven is required.
- Air brake endorsement is required for drivers who operate vehicles equipped with air brakes.
- Drivers who transport hazardous products or dangerous goods must be certified by employers.

Additional information

- Progression to supervisory positions or to non-driving occupations, such as truck driving instructors, safety officers or truck dispatchers is possible with additional training or experience.

Classified elsewhere

- *Supervisors, Motor Transport and Other Ground Transit Operators* (7222)
- Drivers of light trucks (in 7414 *Delivery Drivers*)
- Truck dispatchers (in 1475 *Dispatchers and Radio Operators*)
- Truck driving instructors (in 4131 *College and Other Vocational Instructors*)
- Snowplow, road oiler and garbage truck drivers (in 7422 *Public Works Maintenance Equipment Operators*)

7412 Bus Drivers, Subway Operators and Other Transit Operators

This unit group includes workers who drive buses and operate streetcars, subway trains and light rail transit vehicles to transport passengers on established routes. Bus drivers are employed by municipal governments and private transportation companies. Streetcar, subway and light rail transit operators are employed by municipal governments.

Examples of titles classified in this unit group

Bus Driver
Ground Transportation Driver
Light Rail Transit Operator
School Bus Driver
Sightseeing Tour Driver
Streetcar Operator
Subway Train Operator
Transit Operator

Main duties

Bus and streetcar drivers perform some or all of the following duties:

- Drive buses or streetcars to transport passengers along established routes to local destinations
- Drive buses to transport passengers and goods to intercity or long distance destinations
- Drive sightseeing tour buses to transport passengers locally or over long distances, and may provide information on points of interest during trip
- Provide passengers with information on fares, schedules, and stops
- Collect fares and record transactions
- Report delays, mechanical problems and accidents.

School bus drivers perform some or all of the following duties:

- Drive school buses to transport children between school and home or on excursions
- Ensure children's safety when boarding and leaving buses and crossing street while bus is stopped.

Subway train and light rail transit operators perform some or all of the following duties:

- Operate subway or rail transit vehicles as part of two-person crew
- Observe signals at crossings and arrival and departure points
- Operate controls to open and close transit vehicle doors
- Report delays, malfunctions and accidents to control unit
- Direct passengers during emergency evacuation procedures.

Employment requirements

- Completion of secondary school may be required.
- Up to three months of on-the-job training, including classroom instruction, is usually provided for all occupations in this unit group.
- A minimum of one year of safe driving experience is required.
- Bus drivers require a Class B, C, E or F driver's licence in Ontario, and a Class 2 driver's licence elsewhere.
- Experience as a public transit bus driver is usually required for subway and light rail transit operators.

Additional information

- Progression to transit supervisory or inspector positions is possible with experience.

Classified elsewhere

- Supervisors and inspectors of bus drivers, subway operators and other transit operators (in 7222 *Supervisors, Motor Transport and Other Ground Transit Operators*)

7413 Taxi and Limousine Drivers and Chauffeurs

Taxi and Limousine Drivers drive automobiles and limousines to transport passengers. Chauffeurs drive automobiles and limousines to transport personnel and visitors of businesses, government or other organizations or members of private households. Taxi and Limousine Drivers are employed by taxi and other transportation service companies or may be self-employed. Chauffeurs are employed by businesses, government and other organizations or by private individuals or families.

Examples of titles classified in this unit group

Airport Limousine Driver
Chauffeur
Limousine Driver
Taxi Driver

Main duties

Taxi and limousine drivers perform some or all of the following duties:

- Pick up passengers and drive them to destinations in taxicabs or limousines
- Assist passengers with luggage and in boarding vehicles
- Collect flat-rate or taximeter fares
- Record transactions
- Maintain contact with taxi dispatch unit.

Chauffeurs perform some or all of the following duties:

- Pick up or meet employer according to request, appointment or schedule
- Drive employer to destinations in automobiles or limousines
- Perform business and personal errands for employer such as delivering and picking up mail, business documents and parcels
- Clean and make minor repairs to vehicle or take vehicle for servicing.

Employment requirements

- Some secondary school education is usually required.
- A minimum of one year safe driving experience is usually required.
- A Class G driver's licence is required in Ontario, and a Class 4 driver's licence elsewhere.
- Taxi and limousine drivers require good knowledge of the geographical area to be covered.
- Taxi drivers usually require a municipal permit.

Additional information

- Mobility from taxi or limousine driver to chauffeur is possible with experience.

Classified elsewhere

- *Supervisors, Motor Transport and Other Ground Transit Operators* (7222)
- Taxi dispatchers (in 1475 *Dispatchers and Radio Operators*)

7414 Delivery Drivers

Delivery Drivers drive automobiles, vans and light trucks to pick up and deliver various products. They are employed by dairies, drug stores, newspapers, take-out food stores, dry cleaners, mobile caterers and many other establishments.

Examples of titles classified in this unit group

Bread Deliverer
Canteen Driver
Delivery Driver
Driver Salesperson
Dry Cleaning Driver
Milk Deliverer
Newspaper Delivery Driver
Pizza Delivery Driver
Route Driver
Vending Machine Driver-Supplier

Main duties

Delivery Drivers perform some or all of the following duties:

- Operate and drive automobiles, vans and light trucks (weighing less than 4,600 kg or 10,000 lbs with a maximum of three axles) to pick up and deliver various products, such as fast food, newspapers, magazines, bakery and dairy products and dry cleaning
- Sell products over established routes and accept or make payments for goods
- Record information on pick-ups and deliveries, vehicle mileage, fuel costs and any problems encountered.

Employment requirements

- Some secondary school education is required.
- A driver's licence appropriate to the class of vehicle being driven is required.
- One year of safe driving experience is usually required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Couriers and Messengers* (1463)
- Drivers of heavy trucks (in 7411 *Truck Drivers*)
- Garbage truck drivers (in 7422 *Public Works Maintenance Equipment Operators*)
- Supervisors of delivery drivers (in 7222 *Supervisors, Motor Transport and Other Ground Transit Operators*)

7421 Heavy Equipment Operators (Except Crane)

Heavy Equipment Operators operate heavy equipment used in the construction and maintenance of roads, bridges, airports, gas and oil pipelines, tunnels, buildings and other structures; in surface mining and quarrying activities; and in material handling work. They are employed by construction companies, heavy equipment contractors, public works departments and pipeline, logging, cargo-handling and other companies. Heavy equipment operator apprentices are included in this unit group.

Examples of titles classified in this unit group

Backhoe Operator
Bulldozer Operator
Excavator Operator
Gradall Operator
Grader Operator
Heavy Equipment Operator
Loader Operator
Side Boom Tractor Operator

Main duties

Heavy Equipment Operators perform some or all of the following duties:

- Operate heavy equipment such as backhoes, bulldozers, loaders and graders to excavate, move, load and grade earth, rock, gravel or other materials during construction and related activities
- Operate bulldozers or other heavy equipment to clear brush and stumps prior to logging activities and to build roads at logging and surface mining sites
- Operate heavy equipment with pile driver head to drive piling into earth to provide support for buildings or other structures
- Operate heavy dredging equipment to deepen waterways or reclaim earth fill
- Operate heavy paving and surfacing equipment to lay, spread or compact concrete, asphalt and other surface materials during highway and road construction
- Operate power shovels to excavate rock, ore or other materials from open-pit mines, strip mines, quarries or construction pits
- Operate heavy equipment to move, load and unload cargo
- Conduct pre-operational checks on equipment and clean, lubricate and refill equipment.

Employment requirements

- Some secondary school education is required.
- Completion of a one to two-year apprenticeship program
  or
  Some high school, college or industry courses in heavy equipment operating combined with on-the-job training are required.
- Trade certification is compulsory in Quebec and available, but voluntary, in Newfoundland.
- Internal company certification may be required by some employers.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Contractors and Supervisors, Heavy Construction Equipment Crews* (7217)
- *Crane Operators* (7371)
- *Logging Machinery Operators* (8241)
- *Underground Production and Development Miners* (8231)
- Forklift and industrial truck operators (in 7452 *Material Handlers*)

7422 Public Works Maintenance Equipment Operators

This unit group includes workers who operate vehicles and equipment to maintain streets, highways and sewer systems and operate garbage trucks to remove garbage and refuse. They are employed by municipal, provincial and federal public works departments and by private contractors under contract with government public works departments.

Examples of titles classified in this unit group

Garbage Truck Driver
Municipal Maintenance Equipment Operator
Oil Spreader Operator
Public Works Maintenance Equipment Operator
Road Oiling Truck Driver
Salt Truck Operator
Sand Spreader Operator
Sanitation Truck Driver
Sewer Flushing Truck Operator
Snow Removal Equipment Operator
Street Flusher Operator
Street Sweeper Operator

Main duties

Public Works Maintenance Equipment Operators perform some or all of the following duties:

- Operate garbage trucks to remove garbage and other refuse and dump loads at designated sites
- Operate street cleaning equipment such as street sweepers or other vehicles equipped with rotating brushes to remove sand, litter and trash
- Operate snowploughs or trucks fitted with plough blades to remove snow from streets, highways, parking lots and similar areas
- Operate sewer maintenance equipment such as rodders and sewer jet cleaners to maintain and repair sewer systems
- Operate trucks equipped with road sanding, road oiling and other similar apparatus
- Check, lubricate, refuel and clean equipment and report any malfunctions to supervisor.

Employment requirements

- Some secondary school may be required.
- Experience as a public works labourer is usually required.
- On-the-job training is provided.
- A driver's licence appropriate to a specific type of equipment may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Heavy Equipment Operators (Except Crane)* (7421)
- *Public Works and Maintenance Labourers* (7621)
- *Truck Drivers* (7411)
- Supervisors of public works maintenance equipment operators (in 7217 *Contractors and Supervisors, Heavy Construction Equipment Crews*)

7431 Railway Yard Workers

Railway Yard Workers regulate yard traffic, couple and uncouple trains and perform related yard activities. They are employed by railway transport companies.

Examples of titles classified in this unit group

Car Controller, Railway
Control Tower Operator, Railway
Signal Tower Operator, Railway
Switch Tender, Railway
Towerman/woman, Railway
Yard Coupler, Railway
Yard Worker, Railway

Main duties

Railway Yard Workers perform some or all of the following duties:

- Operate control panel switches from railway yard tower to set traffic signals and to activate train switches that regulate railway traffic in railway yards
- Operate car retarders, turntables and track switches to align locomotives and cars as required for coupling, uncoupling or servicing
- Switch cars according to instructions which indicate the location, disposition and number of cars
- Lubricate moving parts of railway cars and locomotives.

Employment requirements

- Some secondary school education is usually required.
- Experience as a railway labourer is required.
- Level "B" Certificate of the Canadian Rail Operating Rules is required.

Additional information

- On-the-job training is provided.
- Progression to a position such as brakeman is possible with experience.

Classified elsewhere

- *Railway and Motor Transport Labourers* (7622)
- *Railway Conductors and Brakemen/women* (7362)
- *Railway Track Maintenance Workers* (7432)
- Supervisors of railway yard workers (in 7221 *Supervisors, Railway Transport Operations*)

7432 Railway Track Maintenance Workers

Railway Track Maintenance Workers operate machines and equipment to lay, maintain and repair railway tracks. They are employed by railway transport companies.

Examples of titles classified in this unit group

Ballast Regulator Operator, Railway
Equipment Operator, Railway
Machine Operator, Railway
Rail Saw Operator
Section Worker, Railway
Spike Machine Operator, Railway
Tie Tamper Operator, Railway
Trackman/woman, Railway
Track Patroller, Railway

Main duties

Railway Track Maintenance Workers perform some or all of the following duties:

- Operate machines and equipment such as tie cutters, tie injectors, tie anchors, rail lifters, spike drivers, spike pullers, rail saws and tie cranes to lay, maintain and repair railway tracks
- Operate machines and equipment to align tracks, to transfer, spread, level and tamp ballast around ties and rails and to clear snow from tracks
- Clean and make minor repairs to machines and equipment
- Patrol assigned track sections to identify and report damaged or broken track
- Shovel ice and snow from track switch boxes
- Perform other track maintenance duties as directed.

Employment requirements

- Some secondary school education is usually required.
- On-the-job training is provided.

Classified elsewhere

- *Railway and Motor Transport Labourers* (7622)
- *Railway Yard Workers* (7431)
- *Supervisors, Railway Transport Operations* (7221)

7433 Deck Crew, Water Transport

Workers in this unit group stand watch, operate and maintain deck equipment and perform other deck and bridge duties aboard ships or self-propelled vessels under the direction of deck officers. They are employed by marine transportation companies and federal government departments including the armed forces.

Examples of titles classified in this unit group

Able Seaman/woman
Boatswain – Military
Deckhand
Ordinary Seaman/woman
Wheelsman/woman
Tunnel Operator, Ship

Main duties

Workers in this unit group perform some or all of the following duties:

- Stand watch and steer ship or self-propelled vessel under the direction of the officer on watch
- Operate, maintain and repair deck equipment such as winches, cranes, derricks and hawsers
- Clean, chip and paint deck surfaces
- Handle mooring lines, and splice and repair ropes, wire cables and cordage.

Employment requirements

- Some secondary school education is required.
- On-the-job training is provided.
- Senior positions in this unit group, such as able seaman/woman, require experience.

Additional information

- Training and testing for various endorsements and certification, including the Marine Emergency Duty (MED) certificate, occur following employment as a deck crew member.
- Progression to deck officer positions is possible with experience, additional training and deck officer certification by Transport Canada.

Classified elsewhere

- *Boat Operators* (7436)
- *Deck Officers, Water Transport* (2273)
- *Engineer Officers, Water Transport* (2274)
- *Engine Room Crew, Water Transport* (7434)
- *Fishing Vessel Deckhands* (8441)

7434 Engine Room Crew, Water Transport

Workers in this unit group assist ship engineer officers to operate, maintain and repair engines, machinery and auxiliary equipment aboard ships or self-propelled vessels. They are employed by marine transportation companies and federal government departments including the armed forces.

Examples of titles classified in this unit group

Engine Room Crew, Ship
Greaser, Engine Room
Marine Engine Oiler
Marine Engineering Mechanic – Military
Ship Boiler Tender
Ship Stoker

Main duties

Workers in this unit group perform some or all of the following duties:

- Assist ship engineer officers in performing routine maintenance work and repair to ship's engine, machinery and auxiliary equipment
- Monitor engine, machinery and equipment indicators, record variables and report abnormalities to ship engineer officer on watch
- Lubricate moving parts of engines, machinery and auxiliary equipment
- Operate and maintain off-loading liquid pumps and valves
- Clean engine parts and keep engine room clean.

Employment requirements

- Some secondary school education is required.
- On-the-job training is provided.

Additional information

- Training and testing for various endorsements and certification, including the Marine Emergency Duty (MED) cetificate, occur following employment as an engine room crew member.
- Progression to ship engineer officer positions is possible with experience, additional training and certification by Transport Canada.

Classified elsewhere

- *Deck Crew, Water Transport* (7433)
- *Deck Officers, Water Transport* (2273)
- *Engineer Officers, Water Transport* (2274)

7435 Lock and Cable Ferry Operators and Related Occupations

This unit group includes workers who operate lock gates, bridges and similar equipment along canal systems, workers who operate cable ferries and ferry terminal workers. They are employed by the federal government, cable ferry companies and in ferry terminals.

Examples of titles classified in this unit group

Bridgeman/woman
Bridgemaster
Cable Ferry Operator
Canal Operator
Ferry Terminal Worker
Linesman/woman, Canal Lock System
Loading Bridge Operator
Lockmaster

Main duties

Lock equipment operators perform some or all of the following duties:

- Operate telecommunication equipment or use portable loudspeakers to direct movements of vessels in lock area
- Operate controls to open or close lock gates
- Operate controls to raise, lower or turn bridges
- Observe progress of vessels passing through locks.

Cable ferry operators perform some or all of the following duties:

- Signal passengers and motor vehicles to embark and disembark
- Operate cable ferry across narrow waterway
- Perform routine maintenance and repairs to engine, cables and winches.

Ferry terminal workers perform some or all of the following duties:

- Operate controls to adjust landing bridge, position or remove gangplank, open or close doors and gates, and secure or remove docking devices
- Signal passengers and motor vehicles to embark and disembark
- May collect tickets or fares from passengers.

Employment requirements

- Some secondary school education is usually required.
- On-the-job training is provided.

Additional information

- There is little or no mobility between lock equipment operators, cable ferry operators and terminal workers.

7436 Boat Operators

Boat Operators operate small boats or crafts to transport passengers or freight, sort and transport logs or perform other duties. They are employed by marine companies that provide sightseeing tours or water taxi services and by canal, port and harbour authorities and logging companies .

Examples of titles classified in this unit group

Boomboat Operator
Charter Boat Operator
Launch Master
Motor Boat Operator
Scow Captain
Sightseeing Boat Operator
Small Craft Operator
Water Taxi Operator

Main duties

Boat Operators perform some or all of the following duties:

- Operate motorboats, launches, small ferry boats and other similar vessels to transport passengers or freight
- Maintain boats and equipment on board, such as engines, winches, derricks, fire extinguishers and life preservers
- May perform other duties, such as checking for oil spills or other pollutants around ports and harbours, patrolling beaches, measuring depth of water, sorting logs and forming log booms and salvaging lost logs.

Employment requirements

- Some secondary school education is required.
- On-the-job training is provided.
- Master of a Small Craft or Master of a Small Passenger Craft certificate, issued by Transport Canada, is required.

Additional information

- Mobility between boat operators in this unit group is possible.
- Progression to deck officer positions is possible with additional training, experience and certification.

Classified elsewhere

- *Deck Crew, Water Transport* (7433)
- Cable ferry operators (in 7435 *Lock and Cable Ferry Operators and Related Occupations*)
- Ferry boat deck officers and ship pilots (in 2273 *Deck Officers, Water Transport*)

7437 Air Transport Ramp Attendants

Air Transport Ramp Attendants operate ramp-servicing vehicles and equipment, handle cargo and passenger baggage and perform other ground support duties at airports. They are employed by airline and air services companies and the federal government.

Examples of titles classified in this unit group

Aircraft Groomer
Airport Ramp Attendant
Baggage Handler, Air Transport
Cargo Attendant, Air Transport
Ramp Agent, Air Transport
Ramp Attendant, Air Transport
Station Attendant, Air Transport

Main duties

Air Transport Ramp Attendants perform some or all of the following duties:

- Drive and operate ramp-servicing vehicles and equipment such as towing tractors, food service trucks, de-icer sprayers and lavatory servicing trucks
- Position passenger loading stairs and operate aircraft cargo doors
- Marshal or tow aircrafts to gate positions for passenger boarding and deplaning and for loading and unloading of cargo
- Sort and load cargo and passenger baggage according to instructions forwarded by load planner to achieve proper balance
- Unload, sort and route cargo and passenger baggage
- Transport freight between aircraft and airport warehouse
- Clean and prepare aircraft interior for passengers and wash aircraft exterior.

Employment requirements

- Completion of secondary school is usually required.
- Experience operating baggage transporting equipment or warehouse experience may be required.
- A driver's licence and a good driving record is usually required.

Additional information

- There is mobility among jobs in this unit group.

Classified elsewhere

- *Material Handlers* (7452)
- Baggage handlers in accommodation and in rail, water and motor transportation (in 6672 *Other Attendants in Accommodation and Travel (Except Airline Travel)*)
- Aircraft load planners (in 6433 *Airlines Sales and Service Agents*)

7441 Residential and Commercial Installers and Servicers

Workers in this unit group install and service a wide variety of interior and exterior prefabricated products such as windows, doors, electrical appliances, water heaters, fences, play structures and septic systems, at residential or commercial properties. They are employed by companies specializing in specific product installation and service.

Examples of titles classified in this unit group

Aluminium Window Installer
Eavestrough Installer
Electric Appliance Installer
Exterior Cladder
Fence Erector
Kitchen Cupboard and Vanity Installer
Recreation Structure Erector
Siding Installer
Sign Installer
Swimming Pool Installer
Water Conditioner Servicer
Water Heater Servicer
Window Installer

Main duties

Installers and servicers in this unit group perform some or all of the following duties:

- Read blueprints or work order specifications to determine layout and installation procedures
- Measure and mark guidelines to be used for installations
- Install, repair and service interior prefabricated products such as doors, windows, kitchen cupboards, bathroom vanities, water heaters and household appliances using hand and power tools
- Install, repair and service exterior prefabricated products such as siding, shutters, awnings, fence, decks, septic systems, signs and play structures using hand and power tools.

Employment requirements

- Some secondary school education is usually required.
- On-the-job training and several months of related installing, repairing or servicing experience are usually required.
- A driver's licence may be required.

Additional information

- There is some mobility among the various types of installers and servicers in this unit group.

Classified elsewhere

- Central air conditioner and refrigerator installers (in 7313 *Refrigeration and Air Conditioning Mechanics*)
- Supervisors of workers in this unit group (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7442 Waterworks and Gas Maintenance Workers

Waterworks maintenance workers maintain and repair waterworks equipment and facilities. They are employed in water filtration and distribution plants and waste treatment plants. Gas maintenance workers check and perform routine maintenance and minor repairs to exterior and underground gas mains and distribution lines. They are employed by gas distribution companies.

Examples of titles classified in this unit group

Gas Leak Locator
Gas Maintenance Worker
Pipeline Maintenance Worker
Pipeline Patrolman/woman
Utility Plant Maintenance Worker
Waterworks Maintenance Worker

Main duties

Waterworks maintenance workers perform some or all of the following duties:

- Check, clean and lubricate waterworks equipment, such as pumping equipment, chlorination equipment and compressors
- Adjust and repair waterworks equipment under the direction of qualified tradesperson
- Search and locate reported water leaks and repair water-mains, valves or outlets
- Install water meters using hand and power tools.

Gas maintenance workers perform some or all of the following duties:

- Check and lubricate gas pipeline valves
- Conduct routine survey of gas mains and distribution lines to detect and locate escaping gas using gas detecting devices
- Investigate reports of gas leaks to determine the exact location and extent of leaks
- Dig ground to expose gas lines and repair damaged pipes
- Keep record of work performed and location and condition of pipelines
- Provide information on underground gas distribution lines and observe excavation work to ensure that underground gas facilities are protected.

Employment requirements

- Some secondary school education is usually required.
- Several years of experience as a labourer in the same company may be required.
- On-the-job training is provided.

Additional information

- Mobility between jobs in this unit group normally occurs within the same area of work, such as within waste water treatment plants, within water filtration and distribution plants or within gas distribution plants.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Gas Fitters* (7253)
- *Water and Waste Plant Operators* (9424)
- Supervisors of water and gas maintenance workers (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7443 Automotive Mechanical Installers and Servicers

Workers in this group install replacement automotive mechanical parts such as mufflers, exhaust pipes, shock absorbers, springs and radiators and perform routine maintenance service such as oil changes, lubrication and tire repairs on automobiles, trucks and heavy equipment. They are employed by automobile and truck service and repair shops, service departments of industrial establishments and construction, mining and logging companies.

Examples of titles classified in this unit group

Crane Greaser
Muffler Installer
Heavy Equipment Servicer
Radiator Installer
Shock Absorber Installer
Spring Installer
Tire Repairer

Main duties

Automotive Mechanical Installers and Servicers perform some or all of the following duties:

- Change engine oil and lubricate running gears or moving parts of automobiles, trucks and heavy equipment
- Grease booms, pulleys, buckets and other components of heavy equipment
- Replace oil, air and fuel filters on motor vehicles, trucks and heavy equipment
- Install replacement mufflers, exhaust pipes, shock absorbers or radiators on motor vehicles, trucks and heavy equipment
- Repair and balance tires
- Add or replace hydraulic and transmission fluids in motor vehicles, trucks and heavy equipment
- Assist mechanics and perform other duties as directed
- Drive automobile or service truck to location of construction, logging or other industrial sites to provide services.

Employment requirements

- Some secondary school may be required.
- Several months of on-the-job training are usually required.

Additional information

- There is some mobility among installers and servicers in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Heavy-Duty Equipment Mechanics* (7312)
- *Motor Vehicle Mechanics, Technicians and Mechanical Repairers* (7321)
- Supervisors of workers in this unit group (in 7216 *Contractors and Supervisors, Mechanic Trades*)

7444 Pest Controllers and Fumigators

Pest Controllers and Fumigators inspect buildings and outside areas for pest infestation and spray chemical treatments to kill noxious and destructive insects, rodents and other pests or set cage traps to capture and remove animals. They are employed by pest control companies or they may be self-employed.

Examples of titles classified in this unit group

Animal Control Trapper
Exterminator, Pests
Fumigator, Pests
Nuisance Control Trapper
Pest Control Operator
Pest Controller
Pest Control Technician

Main duties

Pest Controllers and Fumigators perform some or all of the following duties:

- Inspect buildings and outside areas at regular intervals or at specific request of property owner to detect signs of infestation
- Determine type of treatment required and provide estimate of costs to clients
- Prepare and spray chemical mixture on infested areas using mechanical or electric sprayer to kill insects, rodents and other pests
- Fumigate households
- Place and set traps to capture and remove animals, such as skunks or raccoons
- Install animal control barriers such as needle strips, netting and other devices to keep animals off property
- Clean out areas that harbour pests using rakes, shovels, brooms or mops
- Advise clients on how to prevent pest infestation.

Employment requirements

- Completion of secondary school is usually required.
- Completion of courses in pest control or extermination or several months of on-the-job training are usually required.
- Provincial pesticide applicator licence is required in all provinces.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Supervisors of pest controllers and fumigators (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7445 Other Repairers and Servicers

This unit group includes workers, not elsewhere classified, who repair and service a wide variety of products, such as cameras, scales, musical instruments, coin machines, vending machines, sporting goods and other miscellaneous products and equipment. They are employed by product specialty repair shops and service establishments.

Examples of titles classified in this unit group

Bicycle Repairer
Camera Repairer
Meter Repairer
Piano Repairer
Scale Repairer
Sewing Machine Servicer
Sporting Goods Repairer
Vending Machine Repairer

Main duties

Repairers and servicers in this unit group perform some or all of the following duties:

- Inspect products to determine the requirement for repair
- Repair or replace defective or worn out parts and components using hand, power or specially designed tools
- Test and adjust repaired products for proper functioning
- May calibrate products using hand tools.

Employment requirements

- Some secondary school education is usually required.
- Completion of college or other courses relevant to a particular equipment or product repair
  or
  Several months of on-the-job training are usually required.

Additional information

- Some mobility may occur among workers in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Locksmiths (in 7383 *Other Trades and Related Occupations*)
- Supervisors of workers in this unit group (in 7219 *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers*)

7451 Longshore Workers

Longshore Workers transfer cargo throughout dock area and onto and from ships and other vessels. They are employed by marine cargo handling companies, shipping agencies and shipping lines.

Examples of titles classified in this unit group

Dockworker
Longshore Worker
Longshoreman/woman
Ship Loader Operator
Stevedore
Tanker Loader

Main duties

Longshore Workers perform some or all of the following duties:

- Operate industrial trucks, tractors and other mobile equipment to transfer cargo, such as containers, crated items, automobiles and pallet-mounted machinery, around dock to within range of cranes and hoists
- Operate winches or other hoisting devices to load and unload cargo onto and from ships and other vessels
- Operate mechanical towers to load vessels with materials such as coal and ore
- Operate equipment to transfer bulk materials, such as grain, to hold of vessels
- Connect hoses and operate equipment to transfer liquid materials into storage tanks on vessels
- Perform other activities such as lashing and shoring cargo aboard ships, opening and closing hatches, cleaning holds of ships and rigging cargo.

Employment requirements

- Some secondary school education may be required.
- On-the-job training is provided.

Additional information

- Progression to foreman/woman or supervisor of longshore workers is possible with experience.

Classified elsewhere

- *Material Handlers* (7452)
- Longshore crane operators (in 7371 *Crane Operators*)
- Supervisors of longshore workers (in 7217 *Contractors and Supervisors, Heavy Construction Equipment Crews*)

7452 Material Handlers

This unit group includes workers who handle, move, load and unload materials by hand or by using a variety of material handling equipment. They are employed by transportation, storage and moving companies, and by a variety of manufacturing and processing companies and retail and wholesale warehouses.

Examples of titles classified in this unit group

Bin Filler
Coal Handler
Conveyor Console Operator
Fork Lift Truck Operator
Freight Handler (Except Airline)
Furniture Mover
Lumber Piler, Building Supplies
Material Handler
Railway Car Loader
Truck Loader
Warehouseman/woman
Stockpiler
Storage Worker

Main duties

Material Handlers (manual) perform some or all of the following duties:

- Load, unload and move products and materials by hand or using basic material handling equipment
- Move household appliances and furniture onto and off moving trucks or vans
- Perform other material handling activities such as counting, weighing, sorting, packing and unpacking.

Material Handlers (equipment operators) perform some or all of the following duties:

- Operate winches and other loading devices to load and unload materials onto and off trucks, railway cars and loading docks of warehouses and industrial establishments
- Operate industrial trucks, tractors, loaders and other equipment to transport materials to and from transportation vehicles and loading docks and to store and retrieve materials in warehouses
- Connect hoses or pipes and operate equipment to load and unload liquid petroleum, chemical or other products into or from tank cars, tank trucks or storage tanks
- Operate equipment to dump materials such as coal ore and grain into or to remove materials from railway cars, trucks or other vehicles
- Operate conveyors and equipment to transfer grain or other materials from transportation vehicles to elevators, bins or other storage areas
- May perform other activities, such as opening containers and crates, filling warehouse orders, assisting in taking inventory and weighing and checking materials.

Employment requirements

- Some secondary school education may be required.
- Physical strength is required for manual material handlers who work with heavy materials.

Classified elsewhere

- *Heavy Equipment Operators (Except Crane)* (7421)
- *Longshore Workers* (7451)
- Airline freight attendants (in 7437 *Air Transport Ramp Attendants*)
- Supervisors of material handlers (in 7217 *Contractors and Supervisors, Heavy Construction Equipment Crews*)
- Warehouse supervisors (in 1215 *Supervisors, Recording, Distributing and Scheduling Occupations*)

7611 Construction Trades Helpers and Labourers

Construction Trades Helpers and Labourers assist skilled trades persons and perform labouring activities at construction sites. They are employed by construction companies and trade and labour contractors.

Examples of titles classified in this unit group

Asphalt Spreader
Bricklayer Helper
Carpenter Helper
Concrete Mixer Helper
Construction Helper
Construction Labourer
Demolition Worker
Drywall Sander
Flagman/woman
Glazier Helper
Labourer, Concrete Paving
Labourer, Excavation
Pipeline Mandrel Operator
Plumber Assistant
Roofer Helper
Stabber, Pipeline Construction

Main duties

Construction Trades Helpers and Labourers perform some or all of the following duties:

- Load and unload construction materials, and move materials to work areas
- Erect and dismantle concrete forms, scaffolding, ramps, catwalks shoring and barricades required at construction sites
- Mix, pour and spread materials such as concrete and asphalt
- Assist trades persons such as carpenters, bricklayers, cement finishers, roofers and glaziers in construction activities
- Assist heavy equipment operators to secure special attachments to equipment, signal operators to guide them in moving equipment, and provide assistance in other activities
- Assist in aligning pipes and perform related activities during oil and gas pipeline construction
- Assist in drilling and blasting rock at construction sites
- Level earth to fine grade specifications using rake and shovel
- Assist in demolishing buildings using prying bars and other tools, and sort, clean and pile salvaged materials
- Remove rubble and other debris at construction sites using rakes, shovels, wheelbarrows and other equipment
- Operate pneumatic hammers, vibrators and tampers as directed
- Tend or feed machines or equipment used in construction such as mixers, compressors and pumps
- Oil and grease hoists and similar equipment
- Direct traffic at or near construction sites
- Perform other activities at construction sites, as directed.

Employment requirements

- Some experience as a general construction labourer may be required for construction trade helpers.
- Some pipeline workers, such as stabbers, mandrel operators and pre-heater tenders, usually require one season of experience in oil and gas pipeline construction.

Additional information

- Mobility is possible among workers in this unit group.

Classified elsewhere

- *Other Trades Helpers and Labourers* (7612)
- *Public Works and Maintenance Labourers* (7621)

7612 Other Trades Helpers and Labourers

This unit group includes trade helpers and labourers, not elsewhere classified, who assist skilled tradespersons and perform labouring activities in the installation, maintenance and repair of industrial machinery, refrigeration, heating and air conditioning equipment, in the maintenance and repair of transportation and heavy equipment, in the installation and repair of telecommunication and power cables and in other repair and service worksettings. They are employed by a wide variety of manufacturing, utility and service companies.

Examples of titles classified in this unit group

Aerial Spraying Assistant
Aircraft Mechanic Helper
Cable Installer Helper
Diesel Mechanic Helper
Ground Worker – Telecommunications
Mechanic's Helper – Automotive
Millwright Helper
Refrigeration Mechanic Helper
Splicer Helper – Telecommunications
Surveyor Helper

Main duties

Trade Helpers and Labourers in this unit group perform some or all of the following duties:

- Move tools, equipment and other materials to and from work areas
- Assist in splicing overhead and underground communications and electric power transmission cables
- Assist in repairing, maintaining and installing industrial machinery and equipment
- Assist in repairing, maintaining and installing refrigeration, heating and air conditioning equipment
- Assist in repairing, maintaining and installing elevators
- Assist in repairing and maintaining stationary electric power generating and distribution equipment
- Assist in mechanical, electrical and body repairs of aircrafts, railway cars, automobiles, trucks, buses, heavy equipment and motorcycles
- Assist in repairing electrical appliances, small engines or other similar equipment
- Mix fertilizers, herbicides and pesticides and load mixture into airplane for aerial spraying
- Assist in land surveying activities, such as holding or moving stakes and rods, clearing brush and debris from line of survey and transporting surveying tools to work area
- Perform other labouring and elemental tasks as required.

Employment requirements

- Some secondary school education may be required.
- On-the-job training is provided.

Additional information

- There is little or no mobility between occupations in this unit group.

Classified elsewhere

- *Construction Trades Helpers and Labourers* (7611)

7621 Public Works and Maintenance Labourers

Public Works and Maintenance Labourers perform a variety of labouring activities to maintain sidewalks, streets, roads and similar areas. They are employed by municipal, provincial and federal government public works departments or by private contractors under contract to governments.

Examples of titles classified in this unit group

Garbage Collector
Municipal Labourer
Parking Meter Collector
Public Works Labourer
Road Maintenance Worker
Sewer Maintenance Worker
Sidewalk Cleaner

Main duties

Public Works and Maintenance Labourers perform some or all of the following duties:

- Clean and maintain sidewalks, streets, roads and public grounds of municipality and other areas, working as member of crew
- Sweep debris and shovel snow from streets, sidewalks, building grounds and other areas, and load snow and debris into carts or trucks
- Shovel cement and other materials into cement mixers, spread concrete and asphalt on road surfaces using shovels, rakes and hand tampers, and perform other activities to assist in maintenance and repair of roads
- Spread sand or salt on sidewalks for snow and ice control
- Dig ditches and trenches using shovels and other hand tools
- Operate jackhammers and drills to break up pavement
- Operate power mowers and cutters to cut lawns and grass along roadsides
- Cut trees, trim branches, rake leaves, apply fertilizer and insecticides by hand, and water public lawns, trees and shrubs
- Load and unload trucks with supplies and equipment
- Collect money from coin boxes of parking meters along established route
- Collect and load refuse on garbage trucks
- Assist equipment operators to secure attachments to equipment or trucks
- Assist in routine maintenance and repair of equipment
- Assist skilled tradespersons such as carpenters, plumbers and mechanics
- May operate mobile sidewalk-cleaning equipment.

Employment requirements

- Several weeks of on-the-job training are provided.

Additional information

- Progression to supervisory positions or to public works maintenance equipment operator positions is possible with experience.

Classified elsewhere

- *Public Works Maintenance Equipment Operators* (7422)
- *Railway and Motor Transport Labourers* (7622)
- Construction labourers (in 7611 *Construction Trades Helpers and Labourers*)
- Park labourers (in 8612 *Landscaping and Grounds Maintenance Labourers*)

7622 Railway and Motor Transport Labourers

Railway and Motor Transport Labourers perform a variety of tasks to assist track maintenance workers and railway yard workers, or motor transport operators. They are employed by railway transport companies and motor transport companies.

Examples of titles classified in this unit group

Car Checker, Railway
Delivery Truck Helper
Furniture Mover Helper
Moving Van Helper
Railway Labourer
Signal Gang Helper
Truck Driver Helper

Main duties

Railway labourers perform some or all of the following duties:

- Transport tools and equipment on push or hand car and perform other duties to assist railway track maintenance workers to lay, maintain and repair railway tracks
- Cut vegetation growth from railway tracks using scythes and mowers
- Check freight cars for physical damage and cleanliness.

Motor transport labourers perform some or all of the following duties:

- Assist truck and delivery drivers to load and unload vehicles
- Perform labouring duties in warehouses.

Employment requirements

- Some secondary school education is usually required.

Additional information

- With experience, railway labourers may progress to railway track maintenance workers or railway yard workers.

Classified elsewhere

- *Material Handlers* (7452)
- Rail car oilers and greasers (in 7431 *Railway Yard Workers*)

OCCUPATIONS UNIQUE TO PRIMARY INDUSTRY

Major Group 82
SKILLED OCCUPATIONS IN PRIMARY INDUSTRY

821 Supervisors, Logging and Forestry

8211 Supervisors, Logging and Forestry

822 Supervisors, Mining, Oil and Gas

8221 Supervisors, Mining and Quarrying
8222 Supervisors, Oil and Gas Drilling and Service

823 Underground Miners, Oil and Gas Drillers and Related Workers

8231 Underground Production and Development Miners
8232 Oil and Gas Well Drillers, Servicers, Testers and Related Workers

824 Logging Machinery Operators

8241 Logging Machinery Operators

825 Contractors, Operators and Supervisors in Agriculture, Horticulture and Aquaculture

8251 Farmers and Farm Managers
8252 Agricultural and Related Service Contractors and Managers
8253 Farm Supervisors and Specialized Livestock Workers
8254 Nursery and Greenhouse Operators and Managers
8255 Landscaping and Grounds Maintenance Contractors and Managers
8256 Supervisors, Landscape and Horticulture
8257 Aquaculture Operators and Managers

826 Fishing Vessel Masters and Skippers and Fishermen/women

8261 Fishing Masters and Officers
8262 Fishing Vessel Skippers and Fishermen/women

Major Group 84
INTERMEDIATE OCCUPATIONS IN PRIMARY INDUSTRY

841 Mine Service Workers and Operators in Oil and Gas Drilling

8411 Underground Mine Service and Support Workers
8412 Oil and Gas Well Drilling Workers and Services Operators

842 Logging and Forestry Workers

8421 Chainsaw and Skidder Operators
8422 Silviculture and Forestry Workers

843 Agriculture and Horticulture Workers

8431 General Farm Workers
8432 Nursery and Greenhouse Workers

844 Other Fishing and Trapping Occupations

8441 Fishing Vessel Deckhands
8442 Trappers and Hunters

Major Group 86
LABOURERS IN PRIMARY INDUSTRY

861 Primary Production Labourers

8611 Harvesting Labourers
8612 Landscaping and Grounds Maintenance Labourers
8613 Aquaculture and Marine Harvest Labourers
8614 Mine Labourers
8615 Oil and Gas Drilling, Servicing and Related Labourers
8616 Logging and Forestry Labourers

8211 Supervisors, Logging and Forestry

Supervisors in this unit group supervise and co-ordinate the activities of workers engaged in logging operations and silvicultural operations. They are employed by logging companies, contractors and government agencies.

Examples of titles classified in this unit group

Forest Operations Supervisor
Forestry Crew Supervisor
Hook Tender
Logging Contractor
Logging Foreman/woman
Production Supervisor, Logging
Woods Foreman/woman
Silviculture Supervisor

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise and co-ordinate the activities of logging and forestry workers in woodland operations, often in several work locations over several square kilometres
- Supervise silvicultural activities such as scarification, planting and vegetation control
- Schedule work crews, equipment and transportation for several work locations
- Resolve work problems and recommend measures to improve work methods
- Instruct workers in safety, recognize unsafe work conditions and modify work procedures
- Ensure that government regulations are met
- Communicate with forestry technical, professional and management personnel regarding forest harvesting and forest management plans, procedures and schedules
- Prepare production and other reports
- Hire and train new workers.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a one to three-year college program for forestry technologists or technicians may be required.
- Formal company training and several months of on-the-job training are provided.
- Several years of experience as a logger, silvicultural worker, or logging machinery operator are usually required.
- A chemical application licence may be required.
- An industrial first aid certificate may be required.

Classified elsewhere

- *Chainsaw and Skidder Operators* (8421)
- *Forestry Technologists and Technicians* (2223)
- *Logging Machinery Operators* (8241)
- *Silviculture and Forestry Workers* (8422)
- Logging and forestry managers (in 0811 *Primary Production Managers (Except Agriculture)*

8221 Supervisors, Mining and Quarrying

Supervisors in this unit group supervise and co-ordinate activities of workers engaged in underground and surface mining operations and quarries. They are employed by coal, metal and non-metallic mineral mines and quarries.

Examples of titles classified in this unit group

Foreman/woman, Underground Mine
Fill Foreman/woman
Level Boss
Mine Captain
Mine Foreman/woman
Mine Supervisor
Shift Boss
Shift Foreman/woman
Supervisor, Mine
Supervisor, Quarry
Supervisor, Surface Mine
Track Boss
Yard Boss

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who extract coal, minerals and ore; operate underground conveyances; and perform other services in support of underground mining, or of heavy equipment operators, drillers, blasters and other workers in surface mining and quarrying
- Establish methods to meet work schedules and confer with managerial and technical personnel, other departments and contractors to resolve problems and co-ordinate activities
- Oversee the safety of the mining or quarrying operation
- Resolve work problems and recommend measures to improve productivity
- Requisition materials and supplies
- Train workers in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports.

Employment requirements

- Completion of secondary school is required.
- Completion of a college or university program in mining technology or engineering may be required for some positions in this group.
- Several years experience in the occupations supervised is usually required.
- Provincial certification as an underground mine supervisor, shift boss, or coal mining supervisor may be required.

Additional information

- There is mobility between employers especially for supervisors with post-secondary diplomas or degrees.
- Mobility between surface mining, underground mining, coal or metal mining sectors may be somewhat limited by differences in production technologies and licensing requirements.

Classified elsewhere

- *Drillers and Blasters – Surface Mining, Quarrying and Construction* (7372)
- *Heavy Equipment Operators (Except Crane)* (7421)
- *Mine Labourers* (8614)
- *Underground Production and Development Miners* (8231)
- *Underground Mine Service and Support Workers* (8411)
- Mine managers (in 0811 *Primary Production Managers (Except Agriculture)*)

8222 Supervisors, Oil and Gas Drilling and Service

Supervisors in this unit group supervise and co-ordinate the activities of workers engaged in drilling for oil or gas, operating service rigs, or providing oil and gas well services. They are employed by drilling and well service contractors and by petroleum producing companies.

Examples of titles classified in this unit group

Fracturing Supervisor
Multi-Service Operator
Rig Manager
Tool Pusher
Well Services Crew Supervisor

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who drill for oil and gas, operate service rigs or provide oil and gas well services
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Requisition materials and supplies
- Resolve work problems and recommend measures to improve productivity
- Train workers in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports
- May set up machines and equipment.

Employment requirements

- Completion of secondary school is required.
- Drilling supervisors, including rig managers and tool pushers, require completion of college or Petroleum Industry Training Service (PITS) courses for drillers and supervisors.
- Extensive experience of eight years or more in the occupations supervised is required.
- Certificates in first-aid, hydrogen sulphide awareness, blowout prevention, Workplace Hazardous Materials Information System (WHMIS), Transportation of Dangerous Goods (TDG), or other safety subjects are required and are obtained by completing short courses.
- Well services supervisors require completion of college or industry courses in the services provided.
- A college diploma in Petroleum Engineering Technology may be required.
- Several years experience in the occupations supervised is required.
- Certificates in first-aid, hydrogen sulphide awareness, blowout prevention, Workplace Hazardous Materials Information System (WHMIS), Transportation of Dangerous Goods (TDG), or other safety subjects are required and are obtained by completing short courses.

Additional information

- There is little mobility for supervisors from well services to well drilling.

Classified elsewhere

- *Oil and Gas Well Drillers, Servicers, Testers and Related Workers* (8232)
- *Oil and Gas Well Drilling Workers and Services Operators* (8412)
- *Primary Production Managers (Except Agriculture)* (0811)

8231 Underground Production and Development Miners

Underground Production and Development Miners drill, blast, operate mining machinery and perform related duties to extract coal and ore in underground mines and to construct tunnels, passageways and shafts to facilitate mining operations. They are employed by coal, metal and non-metallic mineral underground mines and by specialized contractors in mine construction, shaft sinking and tunnelling.

Examples of titles classified in this unit group

Blaster – Underground Mining
Chute Blaster
Diamond Driller – Underground Mining
Drift Miner
Driller
Faceman/woman, Coal Mine
Jumbo Drill Operator
Miner
Mining Machine Operator
Mucking Machine Operator
Raise Miner
Roadheader Operator
Scooptram Operator
Shot Firer

Main duties

Underground Production and Development Miners perform some or all of the following duties:

- Set up and operate drills and drilling machines to produce a designated pattern of blasting holes
- Operate diamond drills or other specialized drills such as raise boring machinery to test geological formations or to produce underground passageways
- Set up and operate mining machinery to shear coal, rock or ore from the working face
- Load explosives, set fuses, and detonate explosives to produce desired blasting patterns and rock fragmentation in underground mines
- Operate scooptram, load-haul-dump (LHD) machine or mucking machine to load and haul ore from stopes, drifts and drawpoints to ore passes
- Perform duties required to ensure safety and to support the mining advance, such as scaling loose rock from walls and roof, drilling and installing rock bolts, extending and installing air and water pipes, operating ore loading machinery, and constructing timber supports and cribbing if required
- Perform routine maintenance of mining machinery.

Employment requirements

- Completion of secondary school is usually required.
- Formal training of up to six weeks followed by extended periods of specialized training as a helper or in support occupations is usually provided.
- Previous experience as a mine labourer or in other mine occupations is usually required.
- Provincial blasting licence may be required.
- May be certified in the basic common core program or as an underground hard rock miner in Ontario.
- Company licensing or certification is often required for occupations in this unit group.

Additional information

- Progression to mining supervisor is possible with experience.
- Mobility is possible to other occupational groups in underground mining such as underground service and support occupations.
- There is mobility between employers within each of the three following sectors: underground coal mining, underground hard rock mining, and underground potash, salt or soft rock mining.
- Mobility between these sectors is somewhat limited by differences in production technologies.

Classified elsewhere

- *Drillers and Blasters – Surface Mining, Quarrying and Construction* (7372)
- *Mine Labourers* (8614)
- *Supervisors, Mining and Quarrying* (8221)
- *Underground Mine Service and Support Workers* (8411)

8232 Oil and Gas Well Drillers, Servicers, Testers and Related Workers

Oil and gas well drillers and well servicers control the operation of drilling and hoisting equipment on drilling and service rigs, and direct the activities of the rig crew under supervision of the rig manager. Oil and gas well loggers, testers and related workers operate specialized mechanical or electronic equipment, tools or instruments to provide services in conjunction with well drilling, completion or servicing. Workers in this unit group are employed by drilling and well service contractors, petroleum producing companies and well logging or testing companies.

Examples of titles classified in this unit group

Assistant Driller
Directional Drilling Operator
Downhole Tool Operator
Drill Stem Tester
Driller
Electric Line Operator
Logging and Perforating Operator
Service Rig Operator
Slickline Operator
Wireline Operator
Well Testing Operator

Main duties

Oil and gas well drillers and well servicers perform some or all of the following duties:

- Direct rig crew in setting up rigs and drilling, completing or servicing oil and gas exploration and producing wells
- Operate controls of drill or service rig drilling and hoisting machinery
- Train or arrange for training of crew
- Maintain records of drilling and servicing operations.

Oil and gas well loggers, testers and related workers perform some or all of the following duties:

- Drive well service or wireline truck to well site
- Assemble and attach equipment, tools or recorders to drill stem or wireline to conduct required procedures and tests
- Operate or direct the operation of wireline or unit controls to lower, position and retrieve equipment and instruments
- Operate recorders and computers in mobile testing or logging unit to collect data
- May perform limited data interpretation.

Employment requirements

- Completion of secondary school is usually required.
- Oil and gas well drillers and well servicers require three to six months of formal on-the-job training, college or Petroleum Industry Training Service (PITS) courses and four or more years of work experience in subordinate rig crew positions.
- A college diploma in drilling may be required.
- Offshore work requires several years of experience in an equivalent position on land.
- Certificates in first-aid, hydrogen sulphide awareness, blowout prevention, Workplace Hazardous Materials Information System (WHMIS) and Transportation of Dangerous Goods (TDG) are required.
- Oil and gas well loggers, testers and related workers require three to six months of formal on-the-job training and several years experience in subordinate logging and testing positions or on drilling and servicing rigs.
- Completion of a college program in electronics or engineering technology may be required for open hole well logging.
- Certificates in first-aid, hydrogen sulphide awareness, blowout prevention, Workplace Hazardous Materials Information System (WHMIS), and Transportation of Dangerous Goods (TDG), are required.
- Provincial blaster licence may be required for well perforation services.

8232 Oil and Gas Well Drillers, Servicers, Testers and Related Workers

Additional information

- Progression to crew supervisors or managers is possible with experience.
- Mobility between jobs on drilling and service rigs is limited by the differences in the machinery, tools and operations performed, but mobility is possible especially from drilling to service rigs.

Classified elsewhere

- *Oil and Gas Well Drilling Workers and Services Operators* (8412)
- *Supervisors, Oil and Gas Drilling and Service* (8222)
- *Water Well Drillers* (7373)

8241 Logging Machinery Operators

Logging Machinery Operators operate cable yarding systems, mechanical harvesters and forwarders and mechanical tree processors and loaders to fell, yard and process trees at logging sites. They are employed by logging companies and contractors.

Examples of titles classified in this unit group

Cable Yarding System Operators
Grapple Operator
Linehorse Operator
Rigging Slinger
Steelspar Operator
Yarder Operator

Mechanical Harvester and Forwarder Operators
Feller Buncher Operator
Feller Forwarder Operator
Shortwood Harvester Operator
Treelength Forwarder Operator

Mechanical Tree Processor and Loader Operators
Chipping Machine Operator
Delimber Operator
Loader Operator
Log Processor Operator
Slasher Operator – Logging

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Cable yarding system operators operate machines to transport trees from logging areas to landing or log loading sites in mountainous terrain in western Canada.
- Mechanical harvester and forwarder operators assess site and terrain and drive heavy equipment to perform a combination of felling, slashing, bucking, bunching and forwarding operations at logging areas.
- Mechanical tree processor and loader operators operate a variety of machines which perform a combination of slashing, bucking, chipping, sorting and loading logs or trees at landing sites.

Employment requirements

- Completion of secondary school may be required.
- On-the-job training from three to sixteen months is provided, depending on the complexity of machinery operated and the type of woodlands operation.
- Experience requirements vary depending on the complexity of machinery operated. Mechanical harvester and forwarder operators may require logging experience as a chainsaw and skidder operator. Feller buncher operators and cable yarder operators usually require three to five years of logging experience. Mechanical tree processor and loader operators usually require one to three years of logging experience.
- Certification as a heavy equipment operator may be required.
- Provincial air brake certification may be required in British Columbia, depending on the type of equipment operated.
- Workplace Hazardous Materials Information System (WHMIS) certification may be required.
- Company certification for mobile logging machinery operation may be required.

8241 Logging Machinery Operators

Additional information

- There is some mobility among jobs in this group from the less complex to more complex machinery operation.
- There is some mobility between employers, particularly in similar types of woodland operations.
- Progression to logging and forestry supervisory positions is possible with experience.
- Self-employment as a logging contractor is possible with investment in equipment.

Classified elsewhere

- *Chainsaw and Skidder Operators* (8421)
- *Heavy Equipment Operators (Except Crane)* (7421)
- *Silviculture and Forestry Workers* (8422)
- *Supervisors, Logging and Forestry* (8211)
- *Truck Drivers* (7411)

8251 Farmers and Farm Managers

Farmers and Farm Managers manage the operations and functions of a farm. They are responsible for growing crops, raising and breeding livestock, poultry and other animals and marketing farm products.

Examples of titles classified in this unit group

Apiarist
Apple Grower
Breeder, Domestic Animals
Chicken Farmer
Dairy Farmer
Fruit Farmer
Feedlot Manager
Fur Farmer
Grape Grower
Hog Breeder
Horse Breeder
Market Gardener
Potato Farmer
Rancher
Seed Grower
Sod Farmer
Vegetable Grower
Vineyard Manager
Wheat Farmer

Main duties

Farmers and Farm Managers perform some or all of the following duties:

- Manage the overall operation of a farm, ranch or orchard
- Determine amount and kinds of crops to be grown and livestock to be raised
- Plant, cultivate and harvest crops
- Raise and breed livestock and poultry
- Hire and supervise farm workers
- Establish a marketing program
- Purchase farm machinery, livestock, seed, feed and other supplies
- Maintain farm machinery, equipment and buildings
- Develop and keep financial and production records.

Farmers and farm managers may manage farms specializing in particular crops such as wheat, apples or potatoes or raise particular livestock such as beef cattle, hogs or chickens.

Employment requirements

- Extensive farming experience (obtained as a farmer, farm supervisor or specialized livestock worker or by working on a family farm) is usually required.
- A college diploma in agriculture may be required.

Classified elsewhere

- *Agricultural and Related Service Contractors and Managers* (8252)
- *Farm Supervisors and Specialized Livestock Workers* (8253)
- *Nursery and Greenhouse Operators and Managers* (8254)
- *Supervisors, Landscape and Horticulture* (8256)

8252 Agricultural and Related Service Contractors and Managers

Contractors and managers in this unit group operate establishments that provide agricultural services such as livestock and poultry breeding, soil preparation, crop planting, crop spraying, cultivating or harvesting.

Examples of titles classified in this unit group

Artificial Inseminator
Crop Dusting Contractor
Livestock Breeding Service Manager
Manager, Artificial Insemination Service
Manager, Crop Harvesting Service

Main duties

Contractors and managers in this unit group perform some or all the following duties:

- Manage businesses which provide an agricultural livestock service such as artificial insemination, spraying or shearing of livestock or disinfecting pens, barns or poultry houses
- Manage businesses which provide agricultural crop services such as plowing, irrigating, cultivating, spraying or harvesting
- Hire and train workers
- Negotiate with farmers and farm managers regarding the services to be provided
- Maintain financial and operation records
- May participate in the provision of the service or in the operation of machinery and equipment.

Employment requirements

- Several years of experience related to the agricultural service offered are usually required.
- Contractors and managers providing certain services, such as artificial insemination and pesticide application, may require training certificates and provincial licensure.

Classified elsewhere

- *Farmers and Farm Managers* (8251)
- *Farm Supervisors and Specialized Livestock Workers* (8253)
- *Nursery and Greenhouse Operators and Managers* (8254)
- *Pest Controllers and Fumigators* (7444)
- *Pet Groomers and Animal Care Workers* (6483)
- *Supervisors, Landscape and Horticulture* (8256)

8253 Farm Supervisors and Specialized Livestock Workers

Farm supervisors supervise the work of general farm workers and harvesting labourers and perform general farm duties. Specialized livestock workers carry out feeding, health and breeding programs on dairy, beef, sheep, poultry and hog farms and may also supervise general farm workers and harvesting labourers.

Examples of titles classified in this unit group

Cattle Herdsperson
Dairy Herdsperson
Farm Foreman/woman
Farm Supervisor
Feedlot Foreman/woman
Hog Operation Supervisor
Horse Trainer
Poultry Farm Foreman/woman
Ranch Foreman/woman
Swine Herdsperson
Vegetable Farm Foreman/woman

Main duties

Farm Supervisors perform some or all of the following duties:

- Co-ordinate and supervise the work of general farm workers and harvesting labourers
- Supervise breeding programs and harvest operations
- Develop work schedules and establish procedures
- Maintain quality control and production records
- Perform general farm duties.

Farm supervisors may specialize in dairy, poultry, swine, beef, sheep, fruit, vegetable, mixed, speciality and equine farms.

Specialized livestock workers perform some or all of the following duties:

- Formulate a feeding program
- Maintain livestock performance records
- Carry out a pasture or pen breeding program
- Recognize and treat certain livestock health problems
- Train horses
- Perform general farm duties
- May supervise general farm workers and harvesting labourers.

Specialized livestock workers usually specialize in one type of farm animal, such as beef cattle, dairy cattle or swine.

Employment requirements

- Farm supervisors and specialized livestock workers may require a college certificate or other specialized training in agriculture or livestock husbandry.

Classified elsewhere

- *Agricultural and Related Service Contractors and Managers* (8252)
- *Farmers and Farm Managers* (8251)
- *General Farm Workers* (8431)
- *Harvesting Labourers* (8611)

8254 Nursery and Greenhouse Operators and Managers

Nursery and Greenhouse Operators and Managers plan, organize, direct and control the activities of nursery and greenhouse staff who grow and market trees, shrubs, flowers and plants.

Examples of titles classified in this unit group

Christmas Tree Farm Operator
Flower Grower
Greenhouse Farmer
Greenhouse Manager
Greenhouse Operator
Nursery Farmer
Nursery Manager
Nursery Operator
Plant Grower

Main duties

Nursery and Greenhouse Operators and Managers perform some or all of the following duties:

- Plan, organize, direct and control the operations of nurseries and greenhouses
- Establish the environmental conditions required to grow trees, shrubs, flowers and plants
- Determine type and quantity of stock to grow
- Supervise staff in planting, transplanting, feeding and spraying stock
- Develop marketing plans
- Provide information to customers on gardening and on the care of trees, shrubs, flowers, plants and lawns
- Order materials such as fertilizer, garden and lawn care equipment, and other nursery and greenhouse related accessories
- Hire and supervise staff, oversee training and set work schedules
- Maintain records on stock, finances and personnel.

Employment requirements

- Completion of a college program in horticulture is usually required.
- Experience as a nursery or greenhouse supervisor is required.

Classified elsewhere

- *Nursery and Greenhouse Workers* (8432)
- *Supervisors, Landscape and Horticulture* (8256)
- Turf growers (in 8251 *Farmers and Farm Managers*)

8255 Landscaping and Grounds Maintenance Contractors and Managers

Landscaping and Grounds Maintenance Contractors and Managers plan, organize, direct and control the operations of landscaping, interior plantscaping, lawn care and tree service departments and establishments.

Examples of titles classified in this unit group

Grounds Maintenance Contractor
Grounds Maintenance Manager
Interior Plantscaping Contractor
Landscape Service Contractor
Landscaping Contractor
Landscaping Manager
Lawn Care Manager
Lawn Maintenance Contractor
Tree Service Contractor

Main duties

Landscaping and Grounds Maintenance Contractors and Managers perform some or all of the following duties:

- Plan, organize, direct and control the operations of landscaping, interior plantscaping, lawn care and tree service establishments
- Tender bids on contracts for landscaping and grounds maintenance work
- Plan and estimate the materials and labour requirements for individual contracts
- Organize and direct the planting and maintenance of trees, gardens, lawns, shrubs and hedges and the construction and installation of fences, decks, patios, walkways and retaining walls
- Hire and supervise staff
- Maintain financial and personnel records.

Employment requirements

- A college diploma or specialized courses in landscaping and horticulture are usually required.
- Experience as a landscape or horticulture supervisor or as a landscape or horticulture technician is required.

Classified elsewhere

- *Contractors and Supervisors, Other Construction Trades, Installers, Repairers and Servicers* (7219)
- *Landscape Architects* (2152)
- *Landscape and Horticulture Technicians and Specialists* (2225)
- *Nursery and Greenhouse Operators and Managers* (8254)
- *Supervisors, Landscape and Horticulture* (8256)

8256 Supervisors, Landscape and Horticulture

Supervisors in this unit group supervise and co-ordinate the activities of workers in the following unit groups: *Landscaping and Grounds Maintenance Labourers* (8612) and *Nursery and Greenhouse Workers* (8432). They are employed by landscaping companies, cemeteries, lawn care and tree service companies, nurseries and greenhouses, and by landscaping departments of governments and private establishments.

Examples of titles classified in this unit group

Cemetery Foreman/woman
Greenhouse Supervisor
Grounds Keeper Supervisor
Landscaping Foreman/woman
Horticulture Worker Supervisor
Nursery Foreman/woman
Park Caretaker
Park Supervisor, Grounds Maintenance
Supervisor, Nursery Workers
Supervisor, Park Labourers

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise and co-ordinate the activities of workers who perform the following duties: maintain lawns, gardens, athletic fields, golf courses, cemeteries, parks, interior plantscapes and other landscaped areas; spread topsoil and lay sod; spray, prune cut and remove trees and shrubs; construct landscape and landscape structures; and plant, cultivate and harvest trees, shrubs, flowers and plants
- Establish work schedules and procedures and co-ordinate activities with other work units
- Resolve work-related problems and prepare and submit progress and other reports
- Train workers in job duties and company policies
- Requisition supplies and materials
- May perform the same duties as workers supervised.

Employment requirements

- Completion of secondary school is usually required.
- Experience in the occupation supervised is required.
- A provincial licence to apply chemical fertilizers, fungicides, herbicides and pesticides may be required.

Classified elsewhere

- *Landscape Architects* (2152)
- *Landscaping and Grounds Maintenance Contractors and Managers* (8255)
- *Nursery and Greenhouse Operators and Managers* (8254)

8257 Aquaculture Operators and Managers

Aquaculture Operators and Managers manage operations of facilities which cultivate and harvest fish, shellfish or marine plants for replenishment of wildlife stocks or for commercial sale. They are employed by public or private fish hatcheries and commercial aquatic farms or they may be self-employed.

Examples of titles classified in this unit group

Aquaculture Manager
Aquaculture Operator
Fish Farm Manager
Fish Farm Operator
Fish Farmer
Fish Hatchery Manager
Fish Hatchery Operator
Mussel Grower
Oyster Grower
Salmon Grower
Trout Farmer

Main duties

Aquaculture Operators and Managers perform some or all of the following duties:

- Manage the overall operation of a fish hatchery, fish farm or other aquatic farm
- Identify requirements of the species and select and oversee preparation of site for species cultivation
- Co-ordinate selection and maintenance of brood stock
- Determine food requirements and structure feeding regimes
- Monitor environment and maintain optimum conditions
- Conduct and supervise stock examination to identify disease or parasites, and apply prescribed medicinal substances to control and prevent infection
- Operate and maintain cultivating and harvesting equipment
- Collect and record growth and production data
- Supervise and train aquaculture and fish hatchery support workers and supervise technicians and technologists
- Maintain financial records and establish market strategies, inventory and quality control methods
- Scuba dive to inspect sea farm operations
- Design and construct pens, floating stations and collector strings or fences for sea farms
- Supervise in processing the product.

Employment requirements

- Completion of secondary school is usually required.
- A college diploma in aquaculture or a related field
  or
  Several years of experience in fishing or aquaculture operations are usually required.
- A commercial aquaculture or fish hatchery licence, permit or lease is required for self-employed aquaculture operators and managers.

Classified elsewhere

- Aquaculture technicians (in 2221 *Biological Technologists and Technicians*)
- Aquaculture support workers (in 8613 *Aquaculture and Marine Harvest Labourers*)

8261 Fishing Masters and Officers

Fishing Masters and Officers manage and operate saltwater and freshwater fishing vessels greater than 100 gross tonnes to pursue and land fish and other marine life. They are employed by establishments engaged in operating commercial fishing vessels.

Examples of titles classified in this unit group

Captain, Fishing Vessel
Captain, Offshore Fishing Vessel
Deck Officer, Fishing Vessel
First Mate, Fishing Vessel
Fishing Master
Master, Fishing Vessel
Mate, Fishing Vessel
Trawler Captain

Main duties

Fishing Masters and Officers perform some or all of the following duties:

- Command fishing vessel to catch fish and other marine life
- Determine areas for fishing, plot courses and compute navigational positions using compass, charts, tables and other aids
- Steer vessels and operate navigational instruments and electronic fishing aids such as colour and paper sounders
- Direct fishing operations and supervise crew activities
- Record fishing progress, crew activities, weather and sea conditions on ship's log
- Select and train vessel crews.

Employment requirements

- Some secondary school education is usually required.
- One to two years of experience as a fishing vessel deckhand is required.
- Captains require one year of service as officer in charge of the watch.
- A Fishing Master's Certificate is required for all occupations in this unit group.
- A commercial fishing licence is required.

Additional information

- Completion of Department of Transport examinations is required to advance from Fishing Master Class IV through Class I. Training programs are provided in provincial training centres.
- Progression to merchant or government vessel officer positions (which require a Marine Officer Certificate) is possible with additional training and experience.

Classified elsewhere

- *Deck Officers, Water Transport* (2273)
- *Fishing Vessel Skippers and Fishermen/women* (8262)
- Fishing vessel engineers requiring a Department of Transport licence (in 2274 *Engineer Officers, Water Transport*)

8262 Fishing Vessel Skippers and Fishermen/women

Fishing Vessel Skippers and Fishermen/women operate fishing vessels to pursue and land fish and other marine life. They are usually self-employed owner-operators of fishing vessels.

Examples of titles classified in this unit group

Fisherman/woman
Fishing Vessel Skipper
Inshore Fisherman/woman
Lobster Fisherman/woman
Longliner, Fisherman/woman
Seiner, Fisherman/woman

Main duties

Fishing Vessel Skippers and Fishermen/women perform some or all of the following duties:

- Operate fishing vessel to pursue and catch fish and other marine life
- Select area for fishing, plot courses and compute navigational positions using compass, charts and other aids
- Steer vessel and operate navigational instruments
- Operate fishing gear, direct fishing operation and supervise fishing crew members
- Maintain engine, fishing gear and other on-board equipment
- Record fishing activities, weather and sea conditions
- Estimate costs of operations and plan budget for each fishing season
- Establish fish marketing plan and keep records of all financial transactions
- May transport fish to processing plants or fish buyers.

Employment requirements

- Several years of experience as fishing vessel crew member or helper are usually required.
- A commercial fishing licence is required.
- Licences are required for each species of fish pursued.

Additional information

- Progression to master or mate on fishing vessels over 100 gross tonnes is possible with additional training, licensing and experience.

Classified elsewhere

- *Fishing Masters and Officers* (8261)
- *Fishing Vessel Deckhands* (8441)

8411 Underground Mine Service and Support Workers

Underground Mine Service and Support Workers perform a range of duties related to the operation of orepasses, chutes and conveyor systems, the construction and support of underground structures, passages and roadways, and the supply of materials and supplies to support underground mining. They are employed by coal, metal and non-metallic mineral mines.

Examples of titles classified in this unit group

Backfiller
Blaster Helper
Cage Tender
Conveyor Operator
Crusher Operator
Driller Helper
Haulageman/woman
Lamp Keeper
Materialman/woman
Mine Construction Worker
Nipper
Orepass Tender
Pipe Worker
Raise Miner Helper
Skip Tender
Timberman/woman
Trainman/woman

Main duties

Underground Mine Service and Support Workers perform some or all of the following duties:

- Operate and maintain ore chutes or conveyor systems to control flow of ore or coal in underground mine
- Operate construction equipment such as bulldozer, grader or backhœ to build and maintain underground passages and haulageways
- Construct wood or metal supports and structures using construction and mining tools
- Attach and extend ventilation and water pipes and related mine service
- Assist miners in setting up and operating drilling and other mining machinery
- Supply and maintain backfill distribution of sand, rock or other materials
- Operate diesel or electric track haulage equipment such as ore trains to distribute personnel and supplies and to convey ore from orepass to primary crusher or skip
- Maintain supply storage areas and maintain equipment and supplies such as explosives, drill bits, fire extinguishers, lamps and batteries
- Perform routine maintenance of machinery.

Employment requirements

- Completion of secondary school is usually required.
- Previous formal training of up to six weeks followed by periods of on-the-job training as a helper or in support occupations is usually required.
- Previous experience as a mine labourer is usually required.
- May be certified in the basic common core program in Ontario.
- Company licensing or certification is often required for occupations in this unit group.

Additional information

- Mobility is possible to other occupational groups in underground mining.
- There is mobility between employers within each of the three following sectors: underground coal mining, underground hard rock mining, and underground potash, salt or soft rock mining.
- Mobility between these sectors is somewhat limited by differences in production technologies.

Classified elsewhere

- *Drillers and Blasters – Surface Mining, Quarrying and Construction* (7372)
- *Mine Labourers* (8614)
- *Underground Production and Development Miners* (8231)

8412 Oil and Gas Well Drilling Workers and Services Operators

Oil and gas well drilling workers operate drilling and service rig machinery as intermediate members of the rig crew. Oil and gas well services operators drive trucks and operate specialized hydraulic pumping systems to place cement in wells or to treat wells with chemicals, sand mixtures or gases to stimulate production. Workers in this unit group are employed by drilling and well service contractors and by petroleum producing companies.

Examples of titles classified in this unit group

Acid Truck Driver
Blender Operator
Cementer
Chemical Services Operator
Coiled Tubing Operator
Derrickman/woman
Formation Fracturing Operator
Motorman/woman
Nitrogen Operator
Pumper Operator
Pumpman/woman

Main duties

Oil and gas well drilling workers perform some or all of the following duties:

- Align and manipulate sections of pipe or drill stem from a platform on the rig derrick during the removal and replacement of strings of pipe, or drill stem and drill bit
- Operate and maintain drilling mud systems and pumps during drilling and mix mud chemicals and additives
- Record mud flows and volumes and take samples
- Operate and maintain drilling rig diesel motors, transmissions and other mechanical equipment
- Assist in setting up, taking down and transporting drilling and service rigs
- Supervise floorhands and labourers.

Oil and gas well services operators perform some or all of the following duties:

- Drive well services truck to well site
- Attach pumps and hoses to wellhead
- Operate hydraulic pumping systems to pump chemicals, gases, sand, cement or other material into well
- Read gauges to interpret conditions and adjust pumping procedure
- May mix chemicals and cements
- Train assistants and helpers.

Employment requirements

- Completion of secondary school may be required.
- Training of up to three months with an experienced operator is required for oil and gas well services operators.
- One year of experience as a floorhand, assistant or labourer is usually required.
- Certificates in first aid, hydrogen sulphide awareness, blowout prevention, Workplace Hazardous Materials Information System (WHMIS), Transportation of Dangerous Goods (TDG), or in other safety concerns may be required.

Additional information

- Progression to oil and gas well driller or service rig operator is possible with experience.
- Progression to supervisor of well services is possible for gas and oil well services operators.

Classified elsewhere

- *Oil and Gas Drilling, Servicing and Related Labourers* (8615)
- *Oil and Gas Well Drillers, Servicers, Testers and Related Workers* (8232)
- *Supervisors, Oil and Gas Drilling and Service* (8222)

8421 Chainsaw and Skidder Operators

Chainsaw and Skidder Operators operate chain saws to fell, delimb and buck trees, and operate skidders to move or yard the felled trees from the logging site to the landing area for processing and transportation. They are employed by logging companies and contractors.

Examples of titles classified in this unit group

Bucker
Chainsaw Operator
Faller
Feller
Forest Worker – Logging
Grapple Skidder Operator
Landingman/woman
Pieceworker – Logging
Skidder Operator

Main duties

Chainsaw and Skidder Operators perform some or all of the following duties:

- Operate chain saw to fell, delimb and buck trees at the logging site and loading area
- Operate cable or grapple skidder to move or yard the felled trees from the logging site to the landing area for processing and transportation
- Assess site, terrain and weather conditions before felling and yarding trees
- May work as member of a team rotating between chain saw operation and skidder operation.

Employment requirements

- Completion of secondary school may be required.
- Completion of a college program for forest workers may be required.
- Formal training in chain saw operation and maintenance and several months of on-the-job training are usually provided.
- Previous experience as a logging and forestry labourer or logging machine operator may be required. Experience requirements vary depending on the type and location of woodlands operations.
- Provincial accreditation or a forest worker program certificate is required in some provinces.
- Workplace Hazardous Materials Information System (WHIMS) certificate may be required.

Additional information

- There is a trend towards company certification of chainsaw operators in larger companies.
- Chainsaw operators often must own and maintain their own chain saw.
- There is some mobility among jobs within this unit group, because chainsaw and skidder operators often work in teams and rotate jobs.
- Mobility may be limited from eastern and central forest zones to western forest zones where tree size or steep terrain may require different cutting and yarding methods.
- Mobility is possible to logging machinery operators.

- Progession to supervisory position or self-employment as a logging contractor is possible with experience.

Classified elsewhere

- *Logging and Forestry Labourers* (8616)
- *Logging Machinery Operators* (8241)
- *Silviculture and Forestry Workers* (8422)
- Logging contractors and supervisors (in 8211 *Supervisors, Logging and Forestry*)

8422 Silviculture and Forestry Workers

Silviculture and Forestry Workers perform a variety of duties related to reforestation and to the management, improvement and conservation of forest lands. They are employed by logging companies, contractors and government services.

Examples of titles classified in this unit group

Clearing Saw Operator
Forestry Crew Person
Forest Fire Fighter
Forestry Worker
Pieceworker, Silviculture
Scarification Equipment Operator
Silviculture Worker
Spacing Saw Operator
Thinning Saw Operator

Main duties

Silviculture and Forestry Workers perform some or all of the following duties:

- Assess site, select seedlings and plant trees using manual planting tools in reforestation areas
- Operate power thinning saw to thin and space trees in reforestation areas
- Operate chainsaw to thin young forest stands
- Control weeds and undergrowth in regenerating forest stands using manual tools and chemicals
- Fight forest fires under direction of fire suppression officer or forestry technician
- Operate a skidder, bulldozer or other prime mover to pull a variety of scarification or site preparation equipment over areas to be regenerated
- Perform other silviculture duties such as collecting seed cones, pruning trees and marking trees for subsequent operations.

Employment requirements

- Completion of secondary school may be required.
- Completion of a college or other specialized program for silviculture workers or forestry crew workers may be required.
- Formal training in power saw operation and maintenance and several months of on-the-job training are usually provided.
- Experience as a logging and forestry labourer may be required.
- A chemicals application licence is required.
- Workplace Hazardous Materials Information System (WHMIS) and Transportation of Dangerous Goods (TDG) certificates may be required.
- A silvicultural workers licence may be required.

Additional information

- There is some mobility among jobs in this unit group.
- Progression to supervisory positions is possible with experience.
- Progression to forestry technician or technologist is possible with additional education and training.

Classified elsewhere

- *Chainsaw and Skidder Operators* (8421)
- *Forestry Technologists and Technicians* (2223)
- *Logging and Forestry Labourers* (8616)
- *Supervisors, Logging and Forestry* (8211)

8441 Fishing Vessel Deckhands

Fishing Vessel Deckhands perform a variety of manual tasks on commercial fishing voyages, and maintain fishing vessels. They are employed by establishments that operate commercial fishing vessels and by self-employed fishermen/women.

Examples of titles classified in this unit group

Crewman/woman, Fishing Vessel
Fishing Vessel Deckhand
Deckhand, Seiner
Icer, Fishing Vessel
Netmender, Fishing Vessel
Trawlerman/woman

Main duties

Fishing Vessel Deckhands perform some or all of the following duties:

- Prepare nets, lines and other fishing tackle, and operate fishing gear to catch fish and other marine life
- Clean, sort and pack fish in ice and stow catch in hold
- Repair nets, splice ropes and maintain fishing gear and other deck equipment
- Clean deck surfaces and fish hold
- Handle mooring lines during docking
- May steer vessels to and from fishing areas
- May prepare and cook meals for crew members.

Employment requirements

- There are no specific education requirements.
- On-the-job training is provided.
- Trawlermen/women require at least one year of experience.
- Fishing vessel deckhands require a commercial fishing licence.

Additional information

- Fishing vessel deckhands may progress to watchkeeper or mate positions with additional training.
- Fishing vessel deckhands may become skippers upon acquiring an entry licence and a boat.

Classified elsewhere

- *Fishing Masters and Officers* (8261)
- *Fishing Vessel Skippers and Fishermen/women* (8262)
- *Deck Officers, Water Transport* (2273)

8442 Trappers and Hunters

Trappers and Hunters trap and hunt wild animals for pelts or live sale. They are usually self-employed and work on a seasonal basis.

Examples of titles classified in this unit group

Fur Trapper
Game Trapper
Hunter
Sealer
Trapper

Main duties

Trappers perform some or all of the following duties:

- Set traps with bait and position traps along trails
- Operate snowmobile or travel on foot, snowshoes or skis to patrol trapline
- Remove catch and reset traps and snares
- Kill and skin catch for pelts, and treat and pack pelts for marketing
- Trap live animals for sale to buyers or for relocation purposes
- Maintain and repair trapping equipment
- Trap designated animals for bounty or other control programs
- May specialize in trapping a particular kind of animal.

Hunters perform some or all of the following duties:

- Operate boat or snowmobile or travel on foot to reach hunting area
- Kill wild animals using firearms or other weapons
- Skin dead animals for pelts using knives
- Treat, pack and transport pelts to processing plants or to public auctions
- Maintain hunting equipment.

Employment requirements

- Completion of trapping or hunting courses may be required in some provinces.
- Trapping or hunting license may be required by provincial government.

Additional information

- In some jurisdictions, trappers may be allocated trapping areas based on the amount of their experience.

Classified elsewhere

- Animal control trappers or nuisance control trappers (in 7444 *Pest Controllers and Fumigators*)

8611 Harvesting Labourers

Harvesting Labourers assist other farm workers to harvest, sort and pack crops.

Examples of titles classified in this unit group

Apple Picker
Berry Picker
Crop Farm Labourer
Fruit Picker
Harvest Hand
Tobacco Picker
Vegetable Packer

Main duties

Harvesting Labourers perform some or all of the following duties:

- Pick row and orchard crops
- Sort and pack fruit and vegetables at farm
- Load, unload and transfer crates, supplies and farm produce, livestock and poultry.

Employment requirements

- There are no specific education or training requirements.

Additional information

- Progression to other farm worker positions is possible with experience.

Classified elsewhere

- *Farm Supervisors and Specialized Livestock Workers* (8253)
- *Farmers and Farm Managers* (8251)
- *General Farm Workers* (8431)

8612 Landscaping and Grounds Maintenance Labourers

Landscaping and Grounds Maintenance Labourers perform manual work to assist in the construction of a landscape and related structures and to maintain lawns, gardens, athletic fields, golf courses, cemeteries, parks, landscaped interiors and other landscaped areas. They are employed by landscaping and lawn care companies, golf courses, cemeteries, and by landscaping departments of governments and private establishments.

Examples of titles classified in this unit group

Bulb Planter
Cemetery Labourer
Gardening Helper
Grass Cutter
Golf Course Worker
Grounds Maintenance Worker
Landscape Labourer
Maintenance Worker, Parks
Sod Layer
Transplanter

Main duties

Landscaping and Grounds Maintenance Labourers perform some or all of the following duties:

- Spread top soil, lay sod, plant flowers, grass, shrubs and trees and perform other duties to assist with the construction of a landscape and related structures
- Cut grass, rake, fertilize and water lawns, weed gardens, prune shrubs and trees and perform other maintenance duties as directed by supervisor
- Operate power mowers, tractors, snowblowers, chain-saws, electric clippers, sod cutters, pruning saws and other landscape maintenance equipment
- Spray and dust trees, shrubs, lawns and gardens, as directed, to control insects and disease
- Perform other manual duties to clean and maintain landscaped environments.

Employment requirements

- Some secondary school education may be required.
- A provincial licence to apply chemical fertilizers, fungicides, herbicides and pesticides may be required.

Additional information

- Progression to technical or supervisory occupations in landscaping and horticulture is possible with additional training or experience.

Classified elsewhere

- *Landscape and Horticulture Technicians and Specialists* (2225)
- *Nursery and Greenhouse Workers* (8432)
- *Residential and Commercial Installers and Servicers* (7441)
- *Supervisors, Landscape and Horticulture* (8256)

8613 Aquaculture and Marine Harvest Labourers

This occupational group includes aquaculture support workers, marine plant gatherers, shellfish diggers and other labourers in aquaculture and fishing. Aquaculture support workers are employed by public or private fish hatcheries and commercial aquatic farms. Marine plant gatherers and shellfish harvesters may be self-employed.

Examples of titles classified in this unit group

Aquaculture Support Worker
Clam Digger
Dulse Gatherer
Fish Farm Helper
Fish Tagger
Fry Marker
Marine Plant Gatherer
Oyster Picker
Sea Farm Attendant
Seaweed Gatherer
Shellfish Harvester
Wharf Worker – Fishing

Main duties

Aquaculture support workers perform some or all of the following duties:

- Assist aquaculture technicians in operation of a fish hatchery or other aquatic farm
- Feed aquaculture stocks, vaccinate stocks, perform culling and marking or banding techniques and report any observed irregularities in stock
- Operate, maintain and clean pumps, filters and other aquaculture equipment and clean and maintain aquaculture enclosures
- Prepare aquaculture stocks for market
- Operate boats, if necessary, in marine aquaculture operations.

Marine plant gatherers perform some or all of the following duties:

- Rake seaweed, dulse or irish moss from beach, rocks or shallow water and load into a cart, wagon or other receptacles
- Spread gatherings to dry and remove foreign objects
- Transport gatherings to processing plant.

Shellfish harvesters perform some or all of the following duties:

- Dig clams from beds with spade, fork or other instrument, or pick oysters
- Clean, sort and transport shellfish to market.

Employment requirements

- Some secondary school education is usually required.
- Shellfish harvesters require commercial fishing licenses.

Classified elsewhere

- *Aquaculture Operators and Managers* (8257)
- *Fishing Vessel Deckhands* (8441)
- *Fishing Vessel Skippers and Fishermen/women* (8262)

8614 Mine Labourers

Mine Labourers carry out a variety of general labouring duties to assist in the extraction of coal, minerals and ore, and in other services in support of underground mining. They are employed by coal, metal and non-metallic mineral mines.

Examples of titles classified in this unit group

Mine Helper
Mine Labourer
Shoveller – Underground Mining

Main duties

Mine Labourers perform some or all of the following duties:

- Assist other mine workers in maintaining or constructing underground installations
- Clean underground rooms, roadways, working areas and mining equipment and conveyances using hand tools
- Load, move, sort and pile materials and supplies
- Clear spills of ore or coal using hand and power tools.

Employment requirements

- Completion of secondary school is usually required.
- A short period of introductory training is provided.
- Mine labourers are registered in the basic common core program in Ontario.

Additional information

- There is mobility among jobs in this group.
- Progression to underground production and development miner or underground mine service and support worker is possible with experience and training.

Classified elsewhere

- *Underground Mine Service and Support Workers* (8411)
- *Underground Production and Development Miners* (8231)

8431 General Farm Workers

General Farm Workers plant, cultivate and harvest crops, raise livestock and poultry and maintain and repair farm equipment and buildings. This group includes operators of farm machinery. General Farm Workers are employed on crop, livestock, fruit, vegetable and specialty farms.

Examples of titles classified in this unit group

Beef Cattle Farm Worker
Cattle Ranch Labourer
Cowboy
Dairy Farm Worker
Farm Machinery Operator
Fruit Tree Pruner
General Farm Worker
Grain Farm Worker
Harvester Machine Operator
Hatchery Worker
Poultry Farm Worker
Vegetable Farm Worker

Main duties

General Farm Workers perform some or all of the following duties:

- Plant, fertilize, cultivate, spray, irrigate and harvest crops
- Feed and tend livestock and poultry
- Operate and maintain farm machinery and equipment
- Detect disease and health problems in crops, livestock and poultry
- Prepare produce for market
- Clean stables, barns, barnyards and pens.

General farm workers can become specialized in a particular type of crop or livestock production through experience.

Employment requirements

- There are no specific education or training requirements. However, college certificate or other specialized courses related to farming, such as farm equipment mechanics, agricultural welding, tree pruning and pesticide application, are available.
- Basic farm knowledge, usually obtained from working on a family farm, may be required for employment.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Agricultural and Related Service Contractors and Managers* (8252)
- *Harvesting Labourers* (8611)
- *Farmers and Farm Managers* (8251)
- *Farm Supervisors and Specialized Livestock Workers* (8253)

8432 Nursery and Greenhouse Workers

Nursery and Greenhouse Workers plant, cultivate and harvest trees, shrubs, flowers and plants, and serve nursery and greenhouse customers. They are employed in indoor and outdoor nurseries and greenhouses.

Examples of titles classified in this unit group

Forest Nursery Worker
Greenhouse Worker
Hothouse Worker
Hydroponics Worker
Nursery Worker

Main duties

Nursery and Greenhouse Workers perform some or all of the following duties:

- Prepare soil; plant bulbs, seeds and cuttings; graft and bud plants; and transplant seedlings and rooted cuttings
- Spray trees, shrubs, flowers and plants to prevent disease and pests
- Position and regulate greenhouse and outdoor irrigation systems to water plants and fields
- Dig, cut and transplant trees, shrubs, flowers and plants and prepare them for sale
- Provide information to customers on gardening and the care of trees, shrubs, flowers, plants and lawns
- May operate tractors and other machinery and equipment to fertilize, cultivate, harvest and spray fields and plants.

Employment requirements

- Completion of secondary school may be required.
- Completion of college courses in horticulture or a related field may be required.
- On-the-job training is provided.
- A provincial licence to apply chemical fertilizers, fungicides, herbicides and pesticides may be required.

Additional information

- Progression to supervisory positions such as greenhouse supervisor is possible with experience.

Classified elsewhere

- *General Farm Workers* (8431)
- *Harvesting Labourers* (8611)
- *Landscaping and Grounds Maintenance Labourers* (8612)
- *Nursery and Greenhouse Operators and Managers* (8254)
- *Silviculture and Forestry Workers* (8422)
- *Supervisors, Landscape and Horticulture* (8256)

8615 Oil and Gas Drilling, Servicing and Related Labourers

Labourers in this unit group carry out a variety of general labouring duties and operate equipment to assist in the drilling and servicing of oil and gas wells. This unit group also includes labourers who assist in geophysical prospecting for oil and gas. They are employed by drilling and well servicing contractors and by petroleum producing companies.

Examples of titles classified in this unit group

Floorman/woman
Helper, Wireline
Labourer, Oil Field
Leasehand
Roughneck
Roustabout
Service Rig Helper
Shakerhand
Well Treatment Helper

Main duties

Labourers in this unit group perform some or all of the following duties:

- Manipulate sections of pipe or drill stem at the rig floor during drilling and during the removal and replacement of strings of pipe or drill stem and drill bit
- Maintain drilling equipment on the drill floor
- Handle, sort and move drill tools, pipe, cement and other materials
- Clean up rig area
- Assist in setting up, taking down and transporting drilling and service rigs and service equipment
- May drive truck to transport materials and well service equipment.

Employment requirements

- Completion of secondary school may be required.
- Completion of introductory college or Petroleum Industry Training Service (PITS) courses may be required.
- Certificates in hydrogen sulphide awareness, Workplace Hazardous Materials Information System (WHMIS) or Transportation of Dangerous Goods (TGD) may be required.

Additional information

- Progression to more senior operating positions is possible with experience.

Classified elsewhere

- *Oil and Gas Well Drilling Workers and Services Operators* (8412)
- *Oil and Gas Well Drillers, Servicers, Testers and Related Workers* (8232)

8616 Logging and Forestry Labourers

Logging and Forestry Labourers perform a variety of manual tasks such as attaching choker cables to logs, planting trees, clearing brush, spraying chemicals, cleaning up landing areas and assisting other workers in woodlands operations. They are employed by logging companies and contractors.

Examples of titles classified in this unit group

Chokerman/woman
Logging Labourer
Forestry Labourer
Swamper, Seasonal
Tree Planter, Seasonal

Main duties

Logging and Forestry Labourers perform some or all of the following duties:

- Assist other workers at logging sites
- Attach chokers or cables to felled trees for yarding
- Plant trees using manual tools
- Spray herbicides from the ground using manual spraying equipment
- Clear trails through woodlands using chain saws
- Clean up landing areas at logging sites.

Employment requirements

- Completion of secondary school may be required.
- Completion of pre-employment safety courses may be required.
- Several weeks of formal and on-the-job training are provided.
- Workplace Hazardous Materials Information System (WHMIS) certificate may be required.
- Chemicals application licence may be required.

Additional information

- There is mobility among jobs in this unit group.
- Progression to other positions, such as silviculture and forestry worker, chainsaw and skidder operator or logging machinery operator is possible with experience.

Classified elsewhere

- *Chainsaw and Skidder Operators* (8421)
- *Logging Machinery Operators* (8241)
- *Silviculture and Forestry Workers* (8422)

OCCUPATIONS UNIQUE TO PROCESSING, MANUFACTURING AND UTILITIES

Major Group 92
PROCESSING MANUFACTURING AND UTILITIES SUPERVISORS AND SKILLED OPERATORS

921 Supervisors, Processing Occupations

9211 Supervisors, Mineral and Metal Processing
9212 Supervisors, Petroleum, Gas and Chemical Processing and Utilities
9213 Supervisors, Food, Beverage and Tobacco Processing
9214 Supervisors, Plastic and Rubber Products Manufacturing
9215 Supervisors, Forest Products Processing
9216 Supervisors, Textile Processing

922 Supervisors, Assembly and Fabrication

9221 Supervisors, Motor Vehicle Assembling
9222 Supervisors, Electronics Manufacturing
9223 Supervisors, Electrical Products Manufacturing
9224 Supervisors, Furniture and Fixtures Manufacturing
9225 Supervisors, Fabric, Fur and Leather Products Manufacturing
9226 Supervisors, Other Mechanical and Metal Product Manufacturing
9227 Supervisors, Other Products Manufacturing and Assembly

923 Central Control and Process Operators in Manufacturing and Processing

9231 Central Control and Process Operators, Mineral and Metal Processing
9232 Petroleum, Gas and Chemical Process Operators
9233 Pulping Control Operators
9234 Papermaking and Coating Control Operators

Major Group 94-95
PROCESSING AND MANUFACTURING MACHINE OPERATORS AND ASSEMBLERS

941 Machine Operators and Related Workers in Metal and Mineral Products Processing

9411 Machine Operators, Mineral and Metal Processing
9412 Foundry Workers
9413 Glass Forming and Finishing Machine Operators and Glass Cutters
9414 Concrete, Clay and Stone Forming Operators
9415 Inspectors and Testers, Mineral and Metal Processing

942 Machine Operators and Related Workers in Chemical, Plastic and Rubber Processing

9421 Chemical Plant Machine Operators
9422 Plastics Processing Machine Operators
9423 Rubber Processing Machine Operators and Related Workers
9424 Water and Waste Plant Operators

943 Machine Operators and Related Workers in Pulp and Paper Production and Wood Processing

9431 Sawmill Machine Operators
9432 Pulp Mill Machine Operators
9433 Papermaking and Finishing Machine Operators
9434 Other Wood Processing Machine Operators
9435 Paper Converting Machine Operators
9436 Lumber Graders and Other Wood Processing Inspectors and Graders

944 Machine Operators and Related Workers in Textile Processing

9441 Textile Fibre and Yarn Preparation Machine Operators
9442 Weavers, Knitters and Other Fabric-Making Occupations
9443 Textile Dyeing and Finishing Machine Operators
9444 Textile Inspectors, Graders and Samplers

945 Machine Operators and Related Workers in Fabric, Fur and Leather Products Manufacturing

9451 Sewing Machine Operators
9452 Fabric, Fur and Leather Cutters
9453 Hide and Pelt Processing Workers
9454 Inspectors and Testers, Fabric, Fur and Leather Products Manufacturing

946 Machine Operators and Related Workers in Food, Beverage and Tobacco Processing

9461 Process Control and Machine Operators, Food and Beverage Processing
9462 Industrial Butchers and Meat Cutters, Poultry Preparers and Related Workers
9463 Fish Plant Workers
9464 Tobacco Processing Machine Operators
9465 Testers and Graders, Food and Beverage Processing

947 Printing Machine Operators and Related Occupations

9471 Printing Machine Operators
9472 Camera, Platemaking and Other Pre-Press Occupations
9473 Binding and Finishing Machine Operators
9474 Photographic and Film Processors

948 Mechanical, Electrical and Electronics Assemblers

9481 Aircraft Assemblers and Aircraft Assembly Inspectors
9482 Motor Vehicle Assemblers, Inspectors and Testers
9483 Electronics Assemblers, Fabricators, Inspectors and Testers
9484 Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing
9485 Assemblers, Fabricators and Inspectors, Industrial Electrical Motors and Transformers
9486 Mechanical Assemblers and Inspectors
9487 Machine Operators and Inspectors, Electrical Apparatus Manufacturing

949 Other Assembly and Related Occupations

9491 Boat Assemblers and Inspectors
9492 Furniture and Fixture Assemblers and Inspectors
9493 Other Wood Products Assemblers and Inspectors
9494 Furniture Finishers and Refinishers
9495 Plastic Products Assemblers, Finishers and Inspectors
9496 Painters and Coaters, Manufacturing
9497 Plating, Metal Spraying and Related Operators
9498 Other Assemblers and Inspectors

951 Machining, Metalworking, Woodworking and Related Machine Operators[14]

9510 Welders and Soldering Machine Operators
9511 Machining Tool Operators
9512 Forging Machine Operators
9513 Woodworking Machine Operators
9514 Metalworking Machine Operators
9515 Welding, Brazing and Soldering Machine Operators
9516 Other Metal Products Machine Operators
9517 Other Products Machine Operators

Major Group 96
LABOURERS IN PROCESSING, MANUFACTURING AND UTILITIES

961 Labourers in Processing, Manufacturing and Utilities

9611 Labourers in Mineral and Metal Processing
9612 Labourers in Metal Fabrication
9613 Labourers in Chemical Products Processing and Utilities
9614 Labourers in Wood, Pulp and Paper Processing
9615 Labourers in Rubber and Plastic Products Manufacturing
9616 Labourers in Textile Processing
9617 Labourers in Food, Beverage and Tobacco Processing
9618 Labourers in Fish Processing
9619 Other Labourers in Processing, Manufacturing and Utilities

[14] In data provided by Statistics Canada, unit groups 7265 and 9515 are combined to form *9510 Welders and Soldering Machine Operators*. Hence, data for major group 95 and for minor group 951 includes unit group 7265.

9211 Supervisors, Mineral and Metal Processing

Supervisors, Mineral and Metal Processing supervise and co-ordinate the activities of workers in the following unit groups: *Central Control and Process Operators, Mineral and Metal Processing* (9231); *Machine Operators and Related Workers in Metal and Mineral Products Processing* (941); and *Labourers in Mineral and Metal Processing* (9611). They are employed in mineral ore and metal processing plants such as copper, lead and zinc refineries, uranium processing plants, steel mills, aluminium plants, precious metal refineries, cement processing plants, clay, glass and stone processing plants and foundries.

Examples of titles classified in this unit group

Blast Furnace Foreman/woman
Brick and Tile Foreman/woman
Cement Processing Supervisor
Coremaking Foreman/woman
Die Casting Supervisor
Foreman/woman, Lead Refining
Metal Rolling Foreman/woman
Melting and Roasting Department Supervisor
Lime Preparation Foreman/woman
Ore Milling Supervisor
Supervisor, Glass Cutters

Main duties

Supervisors Mineral and Metal Processing perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers engaged in the following duties: operating single or multi-function mineral and metal processing machinery and equipment; operating mouldmaking and coremaking machines or manually make moulds and cores; operating glass process control, forming and finishing machines; operating concrete, clay and stone forming and finishing machines; and operating cement process control and machines and equipment
- Establish methods to meet work schedules and co-ordinate work activities with units
- Requisition materials and supplies
- Resolve work problems and recommend work measures to improve productivity and product quality
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports
- May set up machines and equipment.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as a worker in the unit or department being supervised are required.

Classified elsewhere

- *Supervisors, Mining and Quarrying* (8221)
- *Supervisors, Other Mechanical and Metal Product Manufacturing* (9226)

9212 Supervisors, Petroleum, Gas and Chemical Processing and Utilities

Supervisors in this unit group supervise and co-ordinate the activities of workers in the following unit groups: *Petroleum, Gas and Chemical Process Operators* (9232), *Chemical Plant Machine Operators* (9421), *Labourers in Chemical Products Processing and Utilities* (9613), *Water and Waste Plant Operators* (9424), *Stationary Engineers and Auxiliary Equipment Operators* (7351) and *Power Systems and Power Station Operators* (7352). They are employed by petroleum and natural gas processing, pipeline and petrochemical companies, chemical and pharmaceutical companies, water and waste treatment utilities and in a range of other industries and institutions.

Examples of titles classified in this unit group

Chemical Processing Supervisor
Foreman/woman, Chemical
Foreman/woman,Cosmetics Processing
Foreman/woman, Natural Gas Plant
Foreman/woman, Water Purification Plant
Petroleum Processing Foreman/woman
Production Supervisor, Pharmaceuticals
Production Supervisor, Specialty Chemicals
Steam Engineer Leader
Supervisor, Petroleum Refining
Supervisor, Pipeline Operation
Supervisor, Power Station
Supervisor, Sewage Treatment Plant

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who operate petroleum refineries, chemical plants, water and waste disposal plants and equipment, pipelines, heating plants and power stations and systems
- Identify, investigate, correct and document potential environmental and safety problems
- Establish methods to meet work schedules and co-ordinate work activities with other units
- Resolve work problems and recommend measures to improve productivity and product quality
- Provide information for maintenance plans to ensure that maintenance and production objectives are met
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policy
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports and develop and manage operating budget for area of responsibility
- May also supervise, co-ordinate and schedule the activities of trades workers, labourers or other workers.

Employment requirements

- Completion of secondary school is required.
- Post-secondary education in chemical processing or sciences may be required for some occupations in this unit group.
- Several years of experience as a senior operator in the same company or plant are usually required.
- Some occupations in this unit group may require a specific licence or certification, such as a stationary engineer's licence or refrigeration certification.

Additional information

- There is some mobility between occupations with similar technological or licensing requirements within this group.

Classified elsewhere

- Supervisors of telecommunications workers, power utility electricians and power line workers (in 7212 *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations*)

9213 Supervisors, Food, Beverage and Tobacco Processing

Supervisors in this unit group supervise and co-ordinate the activities of workers who operate processing machines, and package or grade food, beverage and tobacco products. They are employed in fruit and vegetable processing plants, dairies, flour mills, bakeries, sugar refineries, fish plants, meat plants, breweries and other food, beverage and tobacco processing establishments.

Examples of titles classified in this unit group

Foreman/woman, Poultry Graders
Packaging Supervisor
Production Supervisor
Supervisor, Bottling
Supervisor, Fish Processing
Supervisor, Food Product Testers
Supervisor, Meat Packing
Supervisor, Tobacco Processing
Supervisor, Vegetable Packing
Team Supervisor, Flour Milling

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who process, package, test and grade food, beverage and tobacco products
- Establish methods to meet work schedules and co-ordinate work activities with other units
- Resolve work problems and recommend measures to improve productivity and product quality
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policy
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience in the food, beverage or tobacco processing industry are required.

Classified elsewhere

- Managers of food, beverage and tobacco processing (in 0911 *Manufacturing Managers*)
- Supervisors of meat and fish inspectors (in 2222 *Agricultural and Fish Products Inspectors*)

9214 Supervisors, Plastic and Rubber Products Manufacturing

Supervisors in this unit group supervise and co-ordinate the activities of workers who operate processing machines and who fabricate, assemble and inspect rubber or plastic products. They are employed by rubber and plastic products manufacturing companies and in plastic parts divisions of other manufacturing companies.

Examples of titles classified in this unit group

Foreman/woman, Blow Moulding
Foreman/woman, Calendering – Rubber and Plastic Manufacturing
Foreman/woman, Extruding – Rubber and Plastic Manufacturing
Supervisor, Injection Moulding
Supervisor, Plastic Products Manufacturing
Supervisor, Rubber Products Manufacturing
Supervisor, Tire Building

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of production workers who operate processing machines and who fabricate, assemble, finish or inspect plastic or rubber parts and products
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Resolve work problems and recommend measures to improve productivity and product quality
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports
- May set up machines and equipment.

Employment requirements

- Some secondary school education is usually required.
- Several years of experience as a machine operator or an assembler in rubber or plastic products manufacturing is usually required.
- Completion of a basic course in statistical process control (SPC) may be required for supervisors in plastic products manufacturing.

Classified elsewhere

- *Labourers in Rubber and Plastic Products Manufacturing* (9615)
- *Plastic Products Assemblers, Finishers and Inspectors* (9495)
- *Plastics Processing Machine Operators* (9422)
- *Rubber Processing Machine Operators and Related Workers* (9423)

9215 Supervisors, Forest Products Processing

Supervisors in this unit group supervise and co-ordinate the activities of workers in the following unit groups: *Pulping Control Operators* (9233), *Papermaking and Coating Control Operators* (9234), *Labourers in Wood, Pulp and Paper Processing* (9614), and *Machine Operators and Related Workers in Pulp and Paper Production and Wood Processing* (943). They are employed by pulp and paper companies, paper converting companies, sawmills, planing mills, wood treatment plants, waferboard plants, and other wood processing companies.

Examples of titles classified in this unit group

Coating Room Foreman/woman – Pulp and Paper
Foreman/woman, Lumber Grading
Foreman/woman, Plywood Making
Foreman/woman, Shingle Mill
Foreman/woman, Waferboard
Foreman/woman, Wood Treating Plant
Paper Machine Foreman/woman
Paper Mill Foreman/woman
Pulp Mill Foreman/woman
Sawmill Foreman/woman
Shift Operating Supervisor – Pulp and Paper
Supervisor, Paper Converting
Tour Foreman/woman – Pulp and Paper

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who operate pulp and paper mills, paper converting mills, sawmills, planing mills, plywood, waferboard and other wood and paper products mills
- Ensure that systems and equipment are operating efficiently and that proper maintenance and repairs are performed
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Resolve work problems and recommend measures to improve productivity and product quality
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions and administer the collective agreement
- Prepare production and other reports
- Monitor safety conditions
- May set up machines and equipment.

Employment requirements

- Completion of secondary school is required.
- A college diploma in pulp and paper technology or a related discipline may be required for some pulp and paper supervisor positions.
- Several years of some combination of formal and on-the-job training are provided.
- Several years of experience in the most senior occupation supervised are often required.
- Certificates, such as lumber grading and industrial first-aid, and a competency certificate in natural gas may be required.

Additional information

- Progression to managerial positions is possible with experience.
- Mobility is possible between positions employing similar technology or producing similar products.

Classified elsewhere

- *Manufacturing Managers* (0911)

9216 Supervisors, Textile Processing

Supervisors in this unit group supervise and co-ordinate the activities of workers engaged in processing fibre into yarn or thread; weaving, knitting or fabricating textile products; bleaching, dyeing and finishing textile products; and inspecting textile products. They are employed by textile companies.

Examples of titles classified in this unit group

Dye Room Supervisor
Finishing Supervisor – Textiles
Foreman/woman, Textile Processing
Spinning Supervisor – Textiles
Supervisor, Knitting
Tufting Supervisor – Textiles
Weave Room Supervisor

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of production workers who operate machines to process fibre, yarn, thread and textiles; and bleach, dye, finish or inspect textiles
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Resolve work problems and recommend measures to improve productivity and product quality
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports
- May set up machines and equipment.

Employment requirements

- Completion of secondary school is usually required.
- A college diploma in textile technology or in a related field may be required for some supervisory positions.
- Several years experience as a textile mechanic or repairer, textile technician or operator in a process such as weaving, tufting or dyeing are usually required.
- Experience may be required in a specific process or with a specific type or model of equipment.

Additional information

- There is mobility among jobs in this group.
- Progression to managerial positions is possible with experience.

Classified elsewhere

- *Textile Machinery Mechanics and Repairers* (7317)
- Technologists and technicians in textile manufacturing (in 2233 *Industrial Engineering and Manufacturing Technologists and Technicians*)
- Master dyers and textile colour technologists (in 2211 *Applied Chemical Technologists and Technicians*)

9221 Supervisors, Motor Vehicle Assembling

Supervisors in this unit group supervise and co-ordinate the activities of workers in motor vehicle production departments. They are employed in plants which manufacture automobiles, vans and light trucks.

Examples of titles classified in this unit group

Area Co-ordinator – Motor Vehicle Manufacturing
Assembly Foreman/woman – Motor Vehicle Manufacturing
Foreman/woman – Motor Vehicle Manufacturing
General Supervisor, Assembly – Motor Vehicle Manufacturing
Supervisor, Assembly – Motor Vehicle Manufacturing
Zone Supervisor, Assembly – Motor Vehicle Manufacturing

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers in motor vehicle manufacturing production departments such as body shop, chassis, paint, trim and hardware and final assembly
- Establish methods to meet work schedules and co-ordinate work activities with other units
- Resolve work problems and recommend measures to improve productivity and product quality
- Train staff in job duties, safety procedures and company policies
- Requisition materials and supplies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as a production worker in motor vehicle manufacturing are required.

Classified elsewhere

- *Motor Vehicle Assemblers, Inspectors and Testers* (9482)
- Supervisors of engine assemblers (in 9226 *Supervisors, Other Mechanical and Metal Product Manufacturing*)

9222 Supervisors, Electronics Manufacturing

Supervisors in this unit group supervise and co-ordinate the activities of workers who assemble, fabricate, test, repair and inspect electronic parts, components and systems. They are employed in electronics manufacturing plants.

Examples of titles classified in this unit group

Assembly Supervisor
Foreman/woman, Electronic Assembly
Foreman/woman, Final Assembly and Test
Foreman/woman, Printed Circuit Board Fabrication
Production Supervisor
Supervisor, Assembly and Test
Systems Test Foreman/woman
Test Supervisor

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who assemble, fabricate, inspect and test electronic and electromechanical assemblies, subassemblies, parts and components
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Resolve work problems and recommend work measures to improve productivity
- Requisition materials and supplies
- Train workers in job duties, safety procedures and company policies and recommend personnel actions such as hirings and promotions
- Ensure safety rules and regulations are followed
- Prepare production and other reports
- May setup machines and equipment
- Supervise, co-ordinate and schedule the activities of related helpers and labourers.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience as an electronics assembler, fabricator, inspector or tester are usually required.
- Completion of a two-year college program in electronics may be required.

Classified elsewhere

- *Electrical and Electronics Engineering Technologists and Technicians* (2241)
- *Electronic Service Technicians (Household and Business Equipment)* (2242)
- *Electronics Assemblers, Fabricators, Inspectors and Testers* (9483)
- *Supervisors, Electrical Products Manufacturing* (9223)

9223 Supervisors, Electrical Products Manufacturing

Supervisors in this unit group supervise and co-ordinate the activities of workers who assemble, fabricate and inspect electrical components, appliances, motors and industrial equipment. They are employed by companies that manufacture electrical products.

Examples of titles classified in this unit group

Foreman/woman, Electrical Motor Assembly
Foreman/woman, Electrical Transformer Assembly
Foreman/woman, Switchgear Assembly
Supervisor, Electrical Appliance Assembly
Supervisor, Electrical Equipment Manufacturing

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who assemble, fabricate and inspect various types of electrical apparatus and equipment such as electrical appliances, batteries, electric motors, transformers and generators and electrical switchgear and control equipment
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Resolve work problems and recommend work measures to improve productivity
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports
- May set up machines and equipment.

Employment requirements

- Completion of secondary school is usually required.
- Several years of experience in the same company as an assembler, inspector or lead hand are required.

Classified elsewhere

- *Supervisors, Electronics Manufacturing* (9222)
- *Contractors and Supervisors, Electrical Trades and Telecommunications Occupations* (7212)

9224 Supervisors, Furniture and Fixtures Manufacturing

Supervisors in this unit group supervise and co-ordinate the activities of workers who manufacture furniture and fixtures made of wood or other materials. They are employed in furniture and fixtures manufacturing establishments.

Examples of titles classified in this unit group

Foreman/woman, Cabinet-makers
Foreman/woman, Desk Assembly
Foreman/woman, Furniture Assembly
Laminating Foreman/woman
Supervisor, Furniture and Fixture Manufacturing
Supervisor, Furniture Finishers
Supervisor, Woodworking Machine Operators
Woodworking Machine Operators Foreman/woman

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who assemble furniture and fixtures of any materials, operate woodworking machines and finish furniture to specified colour or finish
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Resolve work problems and recommend work measures to improve productivity and product quality
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policy
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports.

Employment requirements

- Some secondary school education is usually required.
- Experience in the same company, as a furniture and fixture assembler, woodworking machine operator or furniture finisher, is usually required.

Classified elsewhere

- Supervisors of millwork and wood product manufacturing other than furniture and fixture, and wood machining (in 9227 *Supervisors, Other Product Manufacturing and Assembly*)

9225 Supervisors, Fabric, Fur and Leather Products Manufacturing

Supervisors in this unit group supervise and co-ordinate the activities of workers in the following unit groups: *Sewing Machine Operators* (9451), *Fabric, Fur and Leather Cutters* (9452), *Hide and Pelt Processing Workers* (9453) and *Inspectors and Testers, Fabric, Fur and Leather Products Manufacturing* (9454). They are employed by clothing and textile manufacturers, tanneries and other manufacturers of fabric products.

Examples of titles classified in this unit group

Boot and Shoe Foreman/woman
Canvas Products Manufacturing Foreman/woman
Cutting Department Foreman/woman, Fabric
Embroidery Supervisor, Fabric Products
Fur Dressing Foreman/woman
Hat and Cap Maker Foreman/woman
Sample Room Foreman/woman, Leather Products
Sewing Machine Operator Supervisor
Stitching Department Supervisor
Tannery Foreman/woman

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule the activities of workers who cut or stitch fabric, fur or leather garments and other products in the manufacturing process
- Establish methods to meet work schedules and co-ordinate work activities with other units
- Requisition materials and supplies
- Resolve work problems and recommend measures to improve productivity and product quality
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports.

Employment requirements

- Some secondary school education may be required.
- Several years of experience as a worker in the unit group being supervised are required.

Additional information

- There is little mobility among the various types of supervisors in this group.

Classified elsewhere

- *Supervisors, Textile Processing* (9216)

9226 Supervisors, Other Mechanical and Metal Products Manufacturing

Supervisors in this unit group supervise and co-ordinate the activities of workers who fabricate, assemble and inspect mechanical and metal products, such as aircraft and aircraft parts, heavy trucks, buses, trailers, motor vehicle engines, transmissions, heating equipment, commercial refrigeration and similar metal products. They are employed by a wide variety of manufacturing companies.

Examples of titles classified in this unit group

Aircraft Assembly Foreman/woman
Engine Assembly Supervisor (Except Aircraft)
Foreman/woman, Metalworking Machine Operators
Foreman/woman, Mobile Home Assembly
Supervisor, Aircraft Assembly
Supervisor, Helicopter Assembly
Supervisor, Snowmobile Assembly
Truck Trailer Assembly Foreman/woman

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule activities of workers who assemble and inspect products such as aircraft, buses, heavy trucks, transmissions, automobile engines and refrigeration and heating equipment
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Resolve work problems and recommend measures to improve productivity and product quality
- Requisition materials and supplies
- Train staff in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports
- May set up machinery and equipment.

Employment requirements

- Completion of secondary school may be required.
- Several years of experience as an assembler or inspector in the same company are usually required.

Classified elsewhere

- *Supervisors, Electrical Products Manufacturing* (9223)
- *Supervisors, Motor Vehicle Assembling* (9221)
- Aircraft engine assembly supervisors (in 7216 *Contractors and Supervisors, Mechanic Trades*)
- Supervisors of machine fitters (in 7214 *Contractors and Supervisors, Metal Forming, Shaping and Erecting Trades*)

9227 Supervisors, Other Products Manufacturing and Assembly

This unit group includes supervisors, not elsewhere classified, who supervise and co-ordinate the activities of workers who assemble, fabricate and inspect a variety of products, such as jewellery, clocks and watches, millwork, sporting goods, toys and other miscellaneous products. They are employed in a wide variety of manufacturing companies.

Examples of titles classified in this unit group

Foreman/woman, Bicycle Assembly
Foreman/woman, Clock and Watch Assembly
Foreman/woman, Jewellery Manufacturing
Supervisor, Millwork Assembly
Supervisor, Silverware Manufacturing
Supervisor, Sports Equipment Assembly
Supervisor, Toy Manufacturing

Main duties

Supervisors in this unit group perform some or all of the following duties:

- Supervise, co-ordinate and schedule activities of workers who assemble, fabricate and inspect products, such as jewellery, clocks, watches, bicycles, millwork, sporting goods and toys
- Establish methods to meet work schedules and co-ordinate work activities with other departments
- Resolve work problems and recommend measures to improve productivity and product quality
- Requisition materials and supplies
- Train workers in job duties, safety procedures and company policies
- Recommend personnel actions such as hirings and promotions
- Prepare production and other reports
- May set up machinery and equipment.

Employment requirements

- Completion of secondary school may be required.
- Several years of experience as an assembler or inspector in the same company are usually required.

Additional information

- There is little mobility between different types of supervisors in this unit group.

Classified elsewhere

- Supervisors of woodworking machine operators (in 9224 *Supervisors, Furniture and Fixtures Manufacturing*)

9231 Central Control and Process Operators, Mineral and Metal Processing

Central Control and Process Operators, Mineral and Metal Processing operate and monitor multi-function process control machinery and equipment to control the processing of mineral ores, metals or cement. They are employed in mineral ore and metal processing plants such as copper, lead and zinc refineries, uranium processing plants, steel mills, aluminium plants, precious metal refineries and cement processing plants.

Examples of titles classified in this unit group

Blast Furnace Operator
Central Control Room Operator
Central Control Caster
Console Operator – Cement Manufacturing
Roaster Operator
Rolling Mill Control Operator

Main duties

Central Control and Process Operators, Mineral and Metal Processing perform some or all of the following duties:

- Co-ordinate and monitor the operation of a particular aspect of mineral ore, metal and cement processing production through control panels, computer terminals or other control systems, usually from a central control room
- Operate multi-function central process control machinery to grind, separate, filter, melt, roast, treat, refine or otherwise process mineral ores
- Observe computer-printouts, video monitors and gauges to verify specified processing conditions and to make necessary adjustments
- Co-ordinate and supervise production crew such as machine and process operators, tenders, assistants and helpers
- Start up and shut down the production system in cases of emergency or as required by schedule
- Provide or organize training to members of production crew
- Maintain shift log of production and other data and prepare production and other reports.

Employment requirements

- Completion of secondary school is usually required.
- On-the-job training is provided.
- Several years of experience as a machine or process operator, usually in the same company or production department, are required.

Additional information

- There is little mobility among the various types of central control and process operators within the mineral and metal processing industry.
- With experience, central control and process operators may progress to supervisory positions in mineral and metal processing.

Classified elsewhere

- *Machine Operators, Mineral and Metal Processing* (9411)
- *Supervisors, Mineral and Metal Processing* (9211)

9232 Petroleum, Gas and Chemical Process Operators

Petroleum, Gas and Chemical Process Operators monitor and operate petroleum, petrochemical and chemical plants and monitor, adjust and maintain processing units and equipment in these plants. They are employed by petroleum and natural gas processing, pipeline and petrochemical companies, industrial, agricultural and specialty chemical and pharmaceutical companies.

Examples of titles classified in this unit group

Acid Plant Operator
Cell Room Operator, Chlor-alkali Plant
Chemical Process Operator
Chief Operator – Chemical Processing
Fractionator Operator
Gas Field Operator
Gas Plant Operator
Gas Recovery Operator
Lead Operator – Chemical Processing
Liquefaction Plant Operator
Master Operator – Chemical Processing
Panel Operator – Chemical Processing
Petroleum Process Operator
Pharmaceutical Processing Operator
Pipeline Compressor Station Operator
Process Technician
Refinery Operator
Senior Operating Technician
Senior Operator – Chemical Processing

Main duties

Petroleum, Gas and Chemical Process Operators perform some or all of the following duties:

- Operate electronic or computerized control panel from a central control room to monitor and optimize physical and chemical processes for several processing units
- Control process start-up, shut-down and troubleshooting
- Monitor outside process equipment
- Adjust equipment, valves, pumps and controls and process equipment
- Authorize or co-sign maintenance work orders
- Shut down, isolate and prepare process units or production equipment for maintenance
- Sample products, perform tests, record data, carry out statistical process control on process operations, and write production logs
- Develop operator procedures for normal operation, start-up or shut-down of unit
- Participate in safety audits and programs and provide emergency response when required
- May rotate between different processing units during shift cycles
- May work in a team with shared supervisory responsibilities and participate in training other workers
- May be cross-trained in a skilled trade and work in the trade during shift cycles.

Employment requirements

- Completion of secondary school is required. Mathematics, chemistry and physics subjects are often specified.
- A college diploma in process operation, sciences or a related subject may be required for some positions.
- Petroleum and chemical process operators and process technicians require completion of several years of formal company training.
- Experience as a petroleum or chemical process operator in all the operating units controlled by the central control room is required for chief operators.
- Company certification as a petroleum process operator or technician may be required.
- A provincial stationary engineer licence, compressor operator or refrigeration certificate may be required when certain kinds of equipment are included in the process.
- Certification in the transportation of dangerous goods (TDG), first aid, firefighting, or workplace hazardous materials information system (WHMIS) may be required.

9232 Petroleum, Gas and Chemical Process Operators

Additional information

- There is considerable mobility among jobs within a company, often as part of a formal development or training program.
- Mobility to other petroleum or chemical processing plants is possible, but may be limited by the usual practice of training and promoting workers from within the establishment.
- Occupations in this unit group may involve exposure to hazards of toxic, flammable or explosive chemicals and personal protective equipment may be required.
- Progression to supervisory or managerial positions is possible with experience.

Classified elsewhere

- *Chemical Plant Machine Operators* (9421)
- *Supervisors, Petroleum, Gas and Chemical Processing and Utilities* (9212)

9233 Pulping Control Operators

Pulping Control Operators operate and monitor multi-function process control machinery and equipment to control the processing of wood, scrap pulp and other cellulose materials in the production of pulp. They are employed by pulp and paper companies.

Examples of titles classified in this unit group

Beater Engineer
Bleach Plant Operator
Cook – Pulp and Paper
Digester Operator
Pulping Control Operator
Pulping Group Operator
Thermo Mechanical Pulp Operator

Main duties

Pulping Control Operators perform some or all of the following duties:

- Co-ordinate and monitor the operation of screening equipment, washing equipment, digesters, mixing tanks and other pulp processing equipment from automated panel boards in central control room to control the processing of wood, scrap pulp and other cellulose materials
- Observe panel indicators, gauges, video monitors and other instruments from central control room to detect equipment malfunctions and ensure pulp processes are operating within prescribed production limits
- Analyze instrument readings and production test samples and make adjustments, or direct pulp machine operators to make adjustments to pulp production process and equipment as required
- Complete and maintain production reports.

Employment requirements

- Completion of secondary school is required.
- A college or other program in forest products processing or a related subject may be required.
- Completion of several weeks of formal company training and several months of on-the-job training is required.
- Several years experience as a pulp mill machine operator within the same company is usually required.
- Certificate in industrial first aid may be required.

Additional information

- There is limited mobility among jobs within this occupational group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Pulp Mill Machine Operators* (9432)
- *Supervisors, Forest Products Processing* (9215)

9234 Papermaking and Coating Control Operators

Papermaking and Coating Control Operators operate and monitor multi-function process control machinery and equipment to control the processing of paper, paper pulp and paperboard. They are employed by pulp and paper companies.

Examples of titles classified in this unit group

Back Tender, Paper Machine
Control Operator, Paper Machine
Fourdrinier Machine Operator
Panelboard Operator – Pulp and Paper
Paper Coating Machine Operator
Paper Machine Operator

Main duties

Papermaking and Coating Control Operators perform some or all of the following duties:

- Operate, co-ordinate and monitor the operation of papermaking and papercoating process equipment from central control room or from machine consoles and control panels in equipment cabins to make paper from pulp stock, mix chemicals and dyes, and coat paper products
- Control process operations and machinery using a distributed control system and process computers
- Observe panel indicators, gauges, video monitors and other instruments to detect equipment malfunctions and ensure papermaking and coating processes are operating according to process specifications
- Analyze instrument readings and production test samples and make adjustments or direct other papermaking and finishing machine operators to make adjustments to papermaking and coating process and equipment as required
- Complete and maintain production reports.

Employment requirements

- Completion of secondary school is required.
- Completion of several weeks of formal company training and several months of on-the-job training is required.
- Several years experience as a papermaking and finishing machine operator within the same company is usually required.
- Certificate in industrial first aid may be required.
- Competency certificate in natural gas may be required.

Additional information

- There is limited mobility among jobs within this occupational group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Papermaking and Finishing Machine Operators* (9433)
- *Supervisors, Forest Products Processing* (9215)

9411 Machine Operators, Mineral and Metal Processing

Workers in this unit group operate single function machines or machinery that is part of a larger production process to process mineral ore and metal products. They are employed in mineral ore and metal processing plants such as copper, lead and zinc refineries, uranium processing plants, steel mills, aluminum plants, precious metal refineries and cement processing plants.

Examples of titles classified in this unit group

Aluminum Classifier
Asbestos Drier
Billet Heater
Brick and Tile Crusher Operator
Cement Miller
Extrusion Press Operator
Foil Winding Machine Operator
Furnace Charger
Ladle Pourer
Lead Refiner
Lime Kiln Operator
Mica Sheet Laminator
Quenching Car Operator
Sintering Machine Operator
Steel Roller
Slurry Equipment Operator
Uranium Classifier Operator
Zinc Cell Operator

Main duties

Machine Operators, Mineral and Metal Processing perform some or all of the following duties:

- Set up, prepare and adjust mineral ore, metal and cement processing machinery to carry out one step in the overall mineral ore or metal processing operation
- Operate single-function machinery to grind, separate, filter, mix, melt, treat, cast, roll, refine or otherwise process mineral ores
- Observe gauges, meters, computer print-outs, video monitors and products to ensure correct operation of machine and verify specified processing conditions
- Make adjustments to machinery as required
- Record production information and complete reports.

Employment requirements

- Some secondary school education is required.
- On-the-job training is provided.
- Experience as a labourer in mineral and metal processing is usually required for machine operators.

Additional information

- There is little mobility among the various types of machine operators within the mineral and metal processing industry.
- With experience, machine operators may progress to central control and process operators in mineral and metal processing.

Classified elsewhere

- *Central Control and Process Operators, Mineral and Metal Processing* (9231)
- *Foundry Workers* (9412)
- *Glass Forming and Finishing Machine Operators and Glass Cutters* (9413)
- *Concrete, Clay and Stone Forming Operators* (9414)
- *Inspectors and Testers, Mineral and Metal Processing* (9415)
- *Labourers in Mineral and Metal Processing* (9611)

9412 Foundry Workers

This unit group includes workers who make foundry moulds and cores by hand or machine, cast molten metal, and operate furnaces in the foundry industry. They are employed by metal foundries and foundry departments of metal products manufacturing companies.

Examples of titles classified in this unit group

Bench Moulder
Casting Machine Operator
Ceramic Mouldmaker
Die Casting Machine Operator
Foundry Worker
Furnace Operator – Foundry
Machine Coremaker
Manual Moulder
Melter – Foundry
Metal Caster
Pit Moulder
Sand Coremaker
Sand Moulder

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Manual mouldmakers make sand moulds using patterns, moulding boxes, sand and hand tools following bench, floor or pit moulding methods; operate ovens to dry moulds; and, may pour molten metal into moulds to produce metal castings.
- Manual coremakers make cores for use in moulds to form holes or void spaces in castings using core boxes, sand, hammer and wire or other reinforcing material; coat cores with protective materials and bake cores in oven.
- Machine mouldmakers and coremakers set up, adjust and operate various mouldmaking and coremaking machines to make sand and ceramics moulds and cores.
- Metal casters set up and operate various casting machines to cast ferrous and non-ferrous metal products; hand ladle and pour molten metal into moulds to produce castings.
- Foundry furnace operators operate furnaces used to melt metals for moulding and casting.

Employment requirements

- Some secondary school education is usually required.
- Up to two years of on-the-job training are required for manual mouldmakers; several months of on-the-job training are required for other workers in this unit group.

Additional information

- There is some mobility between workers in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Foundry labourers (in 9611 *Labourers in Mineral and Metal Processing*)
- Furnace operators who operate furnaces to convert and refine primary metals (in 9411 *Machine Operators, Mineral and Metal Processing*)
- Operators of continuous casting of steel or other primary metals or casting of primary ingots (in 9231 *Central Control and Process Operators, Mineral and Metal Processing*)
- Supervisors of foundry workers (in 9211 *Supervisors, Mineral and Metal Processing*)

9413 Glass Forming and Finishing Machine Operators and Glass Cutters

Machine operators in this unit group operate multi-function process control machinery or single function machines to melt, form, cut or finish flat glass, glassware, bottles, and other glass products. Glass cutters cut flat glass of various thicknesses to specified sizes and shapes by hand. They are employed by glass and glass products manufacturing companies.

Examples of titles classified in this unit group

Bottle Machine Operator
Float Operator – Glass Forming
Glass Cutter, Hand
Glass Blowing Machine Operator
Glass Beveller
Glass Finishing Machine Operator
Glass Edger
Glass Moulder
Glass Pressing Machine Operator
Mirror Maker

Main duties

Glass process control operators perform some or all of the following duties:

- Operate multi-function process control machinery through control panels, computer terminals or other control systems to mix and melt raw materials; heat, anneal, temper or form float glass or glass products; and coat glass with silver or other metals and materials
- Observe gauges, computer print-outs and video monitors to verify specified processing conditions and make adjustments as necessary
- Maintain shift log of production and other data
- May operate process control machinery to cut glass or assemble glass window units.

Glass forming machine operators perform some or all of the following duties:

- Set up and adjust automatic glass feeding, flowing and forming machines
- Operate machines that press or blow molten glass in moulds to form or shape containers, such as bottles, jars and drinking glasses
- Spray or swab moulds with oil solutions to prevent adhesion of glass
- Weigh, measure and check production samples to assess conformance to specifications using scales and gauges and by visual verification.

Glass finishing machine operators perform some or all of the following duties:

- Set up and adjust glass and glass-product finishing machines
- Operate finishing machines to grind, drill, sand, bevel, decorate, wash or polish glass or glass products
- Visually inspect products for quality
- Record manufacturing information such as quantity, size and type of goods produced.

Glass cutters perform some or all of the following duties:

- Place sheet of glass on padded table or in jig and measure and mark glass or place pattern on or under glass for cutting
- Examine and mark defective glass to obtain best cut
- Cut glass along marked outlines or around pattern using hand tools
- Smooth rough edges using belt sander or smoothing wheels.

Employment requirements

- Some secondary school education may be required.
- Experience as a machine operator helper in glass manufacturing is usually required for machine operators in this unit group.
- Experience as a glass cutter helper is usually required for manual glass cutters.

Additional information

- Mobility is possible among the various types of machine operators in this unit group.
- Progression to supervisory positions is possible with experience.

9413 Glass Forming and Finishing Machine Operators and Glass Cutters

Classified elsewhere

- *Glaziers* (7292)
- Glass blowers (in 5244 *Artisans and Craftspersons*)
- Helpers and labourers in glass products manufacturing (in 9611 *Labourers in Mineral and Metal Processing*)
- Neon sign makers (in 9484 *Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing*)
- Production inspectors in glass products manufacturing (in 9415 *Inspectors and Testers, Mineral and Metal Processing*)
- Supervisors of workers in this unit group (in 9211 *Supervisors, Mineral and Metal Processing*)

9414 Concrete, Clay and Stone Forming Operators

This unit group includes workers who cast and finish concrete products, operate machines to extrude, mould, press and bake clay products, and operate machines to form, cut and finish stone products. They are employed by concrete, clay and stone products manufacturing companies.

Examples of titles classified in this unit group

Asbestos Shingle Presser
Brick Presser Operator
Clay Press Operator
Concrete Block Maker
Finisher – Concrete, Clay and Stone Products
Granite Cutter
Marble Cutter
Moulder, Clay Products
Precast Concrete Moulder
Precast Concrete Slab Maker
Stone Driller
Stone Planner
Stonework Moulder

Main duties

Concrete products forming and finishing workers perform some or all of the following duties:

- Construct clay models and moulds by hand and with hand tools for use in casting concrete products
- Build and repair wooden forms used to mould concrete products
- Position reinforcing rods or wire mesh in moulds and fill moulds with concrete from suspended pouring buckets
- Start vibrating tables to settle concrete, or tamp concrete using electric vibrator
- Remove castings from mould with crane or forklift, and finish surfaces of castings using screed or trowel
- Cut cured concrete pipe sections with saw or chisel, and cement sections together to form odd shaped fittings.

Concrete products machine operators perform some or all of the following duties:

- Set up, adjust and operate single-function machines to mix, drill, grind and cut concrete to specifications in the manufacture of concrete products
- Check products for quality control and perform ongoing machine adjustments as necessary
- Record manufacturing information such as quantity, size and type of goods produced.

Clay products forming and finishing machine operators perform some or all of the following duties:

- Set up and operate automatic machines that mix ingredients, extrude tempered clay mixture and cut extruded clay into sections to make products such as bricks, drain tiles, and porcelain insulators
- Operate mechanical or hydraulic ram and hot-presses to form pottery and porcelain ware
- Prepare and mix slip and fill moulds with slip to form pottery and porcelain ware such as jugs, cups, sinks and toilet bowls
- Operate kiln to bake clay products to specified hardness.

Stone forming and finishing workers perform some or all of the following duties:

- Operate blade or wire saws to cut blocks of stone to specified dimensions
- Operate machines to grind and polish surfaces of stone blocks, slabs or other stone products to specific shape or design and to produce smooth finish
- Operate sandblasting equipment to cut inscriptions or decorative designs in monumental stone
- Operate stone-dressing lathe to sharpen and dress grindstones that grind logs into pulp
- Operate machine to drill holes in blocks or slabs of stone according to specifications.

9414 Concrete, Clay and Stone Forming Operators

Employment requirements

- Some secondary school education may be required.
- Experience as a helper or labourer in concrete, clay or stone products manufacturing may be required.
- Mould makers in this unit group who construct and repair wooden forms may require some carpentry or woodworking experience.

Additional information

- Mobility is possible between workers within each of the concrete, clay and stone manufacturing sectors, but there is little or no mobility between these manufacturing sectors.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Concrete workers in construction (in 7282 *Cement Finishers*)
- Helpers and labourers in concrete, clay and stone products manufacturing (in 9611 *Labourers in Mineral and Metal Processing*)
- Inspectors of concrete, clay and stone products (in 9415 *Inspectors and Testers, Mineral and Metal Processing*)
- Sculptors (in 5136 *Painters, Sculptors and Other Visual Artists*)
- Stone carvers, hand and craft potters (in 5244 *Artisans and Craftspersons*)
- Stone masons (in 7281 *Bricklayers*)
- Supervisors of workers in this unit group (in 9211 *Supervisors, Mineral and Metal Processing*)

9415 Inspectors and Testers, Mineral and Metal Processing

Inspectors and testers in this unit group inspect, grade, sample or test raw materials and products from mineral ore and metal processing operations. They are employed in mineral ore and metal processing plants such as copper, lead and zinc refineries, uranium processing plants, steel mills, aluminum plants, precious metal refineries, cement processing plants, clay, glass and stone processing plants and foundries.

Examples of titles classified in this unit group

Asbestos Grader
Brick and Tile Inspector
Casting Inspector
Clay Products Grader
Fibreglass Tester
Glass Inspector
Heat Treating Inspector
Metal Processing Inspector
Mineral Sampler
Molten Metal Sampler
Sheet Steel Inspector
Steel Tester

Main duties

Inspectors and testers perform some or all of the following duties:

- Inspect mineral ore, metal, cement, glass, clay or concrete products at various stages of processing to ensure adherence to specifications
- Grade and label raw materials or finished products according to size, thickness, composition or other classification standards
- Take samples of products during or after processing operation for routine analysis or for subsequent laboratory analysis
- Test product for strength, durability and conformity to specification
- Advise supervisor or process and machine operators of problems and product deficiencies
- Complete inspection and test reports.

Employment requirements

- Completion of secondary school is usually required.
- Experience as a machine or process operator in mineral and metal processing is usually required.

Classified elsewhere

- *Machine Operators, Mineral and Metal Processing* (9411)
- Quality control technologists and technicians (in 2211 *Applied Chemical Technologists and Technicians* and in 2212 *Geological and Mineral Technologists and Technicians*)

9421 Chemical Plant Machine Operators

Chemical Plant Machine Operators monitor and operate units and machinery to blend, mix, process and package a wide range of specialty chemicals, pharmaceuticals, cleaning and toiletry products. They are primarily employed in chemical, cleaning compound, ink and adhesive industries, but may also be employed by chemical processing departments in other industries.

Examples of titles classified in this unit group

Batch Mixer – Chemical Processing
Blender – Chemical Processing
Capsule Machine Operator
Evaporator Operator – Chemical Processing
Formulations Blender Operator
Glue Blender
Granulator Machine Operator
Mixer – Chemical Processing
Screener – Chemical Processing
Soap Maker

Main duties

Chemical Plant Machine Operators perform some or all of the following duties:

- Monitor meters, gauges and electronic instrumentation on one or more chemical or formulation units, such as mixers, blenders, driers, tabletting, encapsulation, granulation and coating machines
- Measure, weigh and load chemical ingredients following formulation cards
- Start up, shut down and troubleshoot equipment
- Adjust processing machines and equipment
- Take samples and perform routine chemical and physical tests of products
- Record production data
- May operate equipment from a control room or from control consoles located near the production units.

Employment requirements

- Completion of secondary school is usually required.
- Completion of several months to one year informal, on-the-job training within the company is required for most mixer and blender operators.
- Completion of more than one year of formal and informal company training may be required for some operators working in pharmaceutical, explosives and agricultural chemical or in specialty chemical plants.
- Previous experience in chemical products processing as an assistant, labourer or helper may be required for some occupations in this unit group.
- Certification in the transportation of dangerous goods (TDG), first aid, firefighting or workplace hazardous materials information system (WHMIS) may be required for some occupations in this unit group.

Additional information

- Mobility between employers producing similar products is possible for some of the more skilled operators in this unit group.
- Progression to supervisory positions or to process control occupations is possible with experience.
- Personal protective equipment may be required when working with some types of chemicals or pharmaceuticals.

Classified elsewhere

- *Petroleum, Gas and Chemical Process Operators* (9232)
- *Supervisors, Petroleum, Gas and Chemical Processing and Utilities* (9212)

9422 Plastics Processing Machine Operators

Plastics Processing Machine Operators set up and operate plastic mixing, calendering, extruding and moulding processing machines used in the manufacture of plastic parts and plastic products. They are employed by plastic products manufacturing companies.

Example of titles classified in this unit group

Bag Machine Operator
Banbury Operator
Blow Moulding Machine Operator
Calender Operator – Rubber and Plastic Manufacturing
Extruder Operator – Rubber and Plastic Manufacturing
Injection Moulding Operator
Plastics Press Operator
Printing Roller Moulder
Solution Mixer Operator

Main duties

Mixing machine operators perform some or all of the following duties:

- Weigh resins, colorants and other chemicals according to formulae
- Place weighed materials in mixing machine and operate machine to blend plastic and other chemicals to a specified consistency or viscosity
- Unload mixture into container or conveyor for further processing.

Calendering process operators perform some or all of the following duties:

- Set up and operate calender machines which transform plastic bales or slabs into continuous plastic sheets or films of specified thickness
- Troubleshoot and make minor adjustments to equipment and adjust calender rollers for production line change
- Monitor quality of material produced.

Extruding process operators perform some or all of the following duties:

- Set up and operate extruding machines which extrude plastic compound through a nozzle or die
- Change dies on extruding machines according to production line change
- Troubleshoot and make minor adjustments to equipment
- Monitor quality of material produced.

Moulding process operators perform some or all of the following duties:

- Set up and operate one or more moulding machines which mould plastic products according to specifications
- Change moulds and adjust equipment for production line change
- Troubleshoot and make minor adjustments to equipment
- Monitor quality of material produced
- Follow formulation card to mix resin batches for injection moulding process.

Employment requirements

- For all operators in this unit group, completion of secondary school may be required.
- On-the-job training is provided.
- Several years of experience as a helper, tender or packer in the same company may be required.
- Completion of a statistical process control (SPC) course may be required.
- Completion of courses in hydraulics, pneumatics and electronics systems may be required for moulding process operators.

Additional information

- Progression to supervisory positions is possible with experience.
- Mobility among the various operators in this unit is possible.

Classified elsewhere

- *Labourers in Rubber and Plastic Products Manufacturing* (9615)
- *Plastic Products Assemblers, Finishers and Inspectors* (9495)
- *Rubber Processing Machine Operators and Related Workers* (9423)
- *Supervisors, Plastic and Rubber Products Manufacturing* (9214)

9423 Rubber Processing Machine Operators and Related Workers

Workers in this unit group operate rubber processing machinery and assemble and inspect rubber products. They are employed by tire manufacturers and other rubber products manufacturing companies.

Examples of titles classified in this unit group

Assembler, Rubber Goods
Banbury Operator
Belt Builder, Rubber
Calender Operator
Cure Operator
Cracker Operator
Extruder Operator
Hose Builder, Rubber
Inspector – Rubber Manufacturing
Rubber Products Assembler
Rubber Processing Machine Operator
Tire Builder
Tire Inspector

Main duties

Rubber processing machine operators perform some or all of the following duties:

- Set up, operate and tend machinery used for mixing, calendering, extruding, moulding and curing rubber materials or rubber products
- Check and monitor product quality
- Adjust machines to proper setting as required
- Train or assist in training new workers.

Assemblers, rubber products perform some or all of the following duties:

- Lay out and prepare rubber materials for assembly
- Operate machines or equipment or use hand tools to cut, shape, splice, fit and cement rubber materials to form rubber parts or finished rubber products
- Operate finishing machines or equipment to trim, grind or buff rubber products into final form
- Train or assist in training new workers.

Rubber products inspectors perform some or all of the following duties:

- Inspect finished rubber products for defects and conformance to specifications and quality standards, visually or using instruments
- Affix seals or tags to approved products and mark and re-route defective products for repair or recycle
- Fill out product inspection report
- May make minor adjustments or repairs to products.

Employment requirements

- Some secondary school education is usually required.
- Experience as a labourer in the same company may be required.
- On-the-job training is provided.

Additional information

- Progression to supervisory positions is possible with experience
- Mobility among the various labourers in this unit group is possible.

Classified elsewhere

- *Labourers in Rubber and Plastic Products Manufacturing* (9615)
- *Plastic Products Assemblers, Finishers and Inspectors* (9495)
- *Plastics Processing Machine Operators* (9422)
- *Supervisors, Plastic and Rubber Products Manufacturing* (9214)

9424 Water and Waste Plant Operators

Water plant operators monitor and operate computerized control systems and related equipment in water filtration and treatment plants to regulate the treatment and distribution of water. Waste plant operators monitor and operate computerized control systems and related equipment in waste water, sewage treatment and liquid waste plants to regulate the treatment and disposal of sewage and wastes. They are employed by municipal governments, industries and institutions.

Examples of titles classified in this unit group

Operator, Water Purification Plant
Process Operator, Liquid Waste
Sewage Plant Operator
Waste Water Treatment Plant Operator
Water Filtration Plant Operator
Water Treatment Plant Operator

Main duties

Water plant operators perform some or all of the following duties:

- Operate and monitor computerized control systems and related equipment in water filtration and treatment plants to regulate the treatment and distribution of water
- Read flow meters, gauges and other recording instruments to measure water output and consumption levels, bacterial content, chlorine and fluoride levels
- Monitor and inspect plant equipment and systems to detect equipment malfunctions and to ensure plant systems are operating normally
- Collect and test water samples for chemical and bacterial content
- Analyze test results and instrument readings and make adjustments to plant equipment and systems as required
- Complete and maintain plant logs and reports.

Waste plant operators perform some or all of the following duties:

- Operate and monitor computerized control systems and related equipment in waste water treatment, sewage treatment and liquid waste plants to regulate the flow of sewage through settling, aeration and digestion tanks, and to treat and dispose of sewage and wastes
- Patrol plant to check pumps, motors, filters, chlorinators and other plant equipment; monitor and read gauges, meters and other recording instruments to detect equipment malfunctions and ensure plant systems and equipment are operating within prescribed limits
- Collect waste and sewage samples, test and analyze results and make adjustments to plant equipment and systems as required
- Complete and maintain plant logs and reports.

Employment requirements

- Completion of secondary school is usually required.
- College, high school or industry training courses in water treatment pollution control are required.
- On-the-job training is provided.
- Previous experience as a labourer or utilities maintenance worker with the same employer may be required.

Additional information

- Progression to supervisory positions is possible with experience.
- There is limited mobility between water plant and waste plant operators.

Classified elsewhere

- *Supervisors, Petroleum, Gas and Chemical Processing and Utilities* (9212)
- *Waterworks and Gas Maintenance Workers* (7442)
- Water and waste plant labourers (in 9613 *Labourers in Chemical Products Processing and Utilities*)

9431 Sawmill Machine Operators

Sawmill Machine Operators operate, monitor and control automated lumbermill equipment to saw timber logs into rough lumber; saw, trim and plane rough lumber into dressed lumber of various sizes; and saw or split shingles and shakes. They are employed in sawmills and planing mills.

Examples of titles classified in this unit group

Circular Saw Operator
Edgerman/woman
Head Sawyer
Log Cut Off Operator
Planer Operator
Resaw Operator
Shake Splitter
Trimmerman/woman

Main duties

Sawmill Machine Operators perform some or all of the following duties:

- Examine logs and rough lumber to determine size, condition, quality and other characteristics to decide best lumber cuts to carry out
- Operate automated lumbermill equipment from control rooms or equipment consoles to saw logs into rough lumber; saw, trim and plane rough lumber into dressed lumber of various sizes; and saw or split shingles and shakes
- Start conveyor system to move logs and lumber to and from saws
- Set up and adjust saw equipment and replace blades or bands using wrenches, gauges and other hand tools
- Monitor logs and lumber movement to ensure cuts are made according to specifications
- Clean and lubricate sawmill equipment.

Employment requirements

- Completion of a secondary school may be required.
- Several weeks of on-the-job training are usually provided.
- Head sawyers and planer operators usually require several years of experience in other sawmill machine operating positions in the same company.
- A certificate in industrial first aid may be required.

Additional information

- There is some mobility among jobs in this occupational group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Labourers in Wood, Pulp and Paper Processing* (9614)
- *Lumber Graders and Other Wood Processing Inspectors and Graders* (9436)
- *Other Wood Processing Machine Operators* (9434)
- *Supervisors, Forest Products Processing* (9215)
- *Woodworking Machine Operators* (9513)

9432 Pulp Mill Machine Operators

Pulp Mill Machine Operators operate and monitor various types of processing machinery and equipment to produce pulp. They are employed by pulp and paper companies.

Examples of titles classified in this unit group

Assistant Bleacher Operator – Pulp and Paper
Assistant Digester Operator
Beater Operator
Cook's First Helper – Pulp and Paper
Field Operator – Pulp and Paper
Grinderman/woman – Pulp and Paper
Refiner Operator – Pulp and Paper
Screenman/woman – Pulp and Paper
Thermo Mechanical Pulp Assistant Operator

Main duties

Pulp Mill Machine Operators perform some or all of the following duties:

- Operate and monitor screening equipment, digesters, mixing tanks, washers, and other pulp processing machinery and equipment to carry out one or more cellulose processing steps
- Observe equipment and machinery panel indicators, gauges, level indicators and other equipment instruments to detect machinery and equipment malfunctions and ensure process steps are carried out according to specifications
- Communicate with pulping control operator to make process adjustments and start up or shut down machinery and equipment as required
- Collect processing samples and conduct titration tests, pH readings and other routine tests on pulp and solutions
- Maintain and complete production reports.

Employment requirements

- Completion of secondary school is required.
- A college diploma in forest products processing or a related subject may be required.
- Completion of several weeks of formal company training and several months of on-the-job training is required.
- Previous experience as a pulp mill labourer within the same company is usually required.
- A certificate in industrial first aid may be required.

Additional information

- There is limited mobility among jobs within this occupational group.
- Progression to pulping control operator is possible with experience.

Classified elsewhere

- *Labourers in Wood, Pulp and Paper Processing* (9614)
- *Pulping Control Operators* (9233)

9433 Papermaking and Finishing Machine Operators

Papermaking and Finishing Machine Operators operate process machinery and equipment and assist papermaking and coating control operators to produce, coat and finish paper. They are employed by pulp and paper companies.

Examples of titles classified in this unit group

Assistant Coating Operator – Pulp and Paper
Balerman/woman – Pulp and Paper
Calender Operator – Pulp and Paper
Embossing Calender Operator – Pulp and Paper
Fourth Hand – Pulp and Paper
Graderman/woman – Pulp and Paper
Sheeter Operator – Pulp and Paper
Winderman/woman – Pulp and Paper

Main duties

Papermaking and Finishing Machine Operators perform some or all of the following duties:

- Operate and monitor various papermaking and finishing process machinery and equipment to dry, laminate, coat, slit, trim, wind or carry out other papermaking and finishing process steps
- Mount, position and thread paper rolls using a hoist
- Control process machinery using a distributed control system and process computers
- Observe equipment and machinery, panel indicators, gauges, level indicators and other equipment instruments to detect machinery and equipment malfunctions and ensure process steps are carried out according to specifications
- Communicate with and assist papermaking and coating control operators to make process adjustments and start-up or shut-down process machines as required
- Inspect paper visually for wrinkles, holes, discolouration, streaks or other defects
- Maintain and complete production reports.

Employment requirements

- Completion of secondary school is required.
- Completion of several weeks of formal company training and several months of on-the-job training is required.
- Previous experience as a labourer within the same company is usually required.

Additional information

- There is limited mobility among jobs within this occupational group.
- A certificate in industrial first aid may be required.
- A competency certificate in natural gas may be required.
- Progression to papermaking and coating control operator occupations is possible with experience.

Classified elsewhere

- *Labourers in Wood, Pulp and Paper Processing* (9614)
- *Papermaking and Coating Control Operators* (9234)
- Machine operators engaged in fabricating and assembling paper products (*in 9435 Paper Converting Machine Operators*)

9434 Other Wood Processing Machine Operators

Machine operators in this unit group operate and tend wood processing equipment and machines to remove bark from logs, produce wood chips, preserve and treat wood, and produce waferboards, particle boards, hardboards, insulation boards, plywood, veneers and similar wood products. They are employed in sawmills, woodrooms of pulp mills, planing mills, wood treatment plants, waferboard plants and other wood processing plants.

Examples of titles classified in this unit group

Barker Operator
Chipper Operator
Lumber Kiln Operator
Particle Board Line Operator
Plywood Panel Assembler
Timber Treating Tank Operator
Veneer Drier Tender
Veneer Lathe Operator
Waferboard Press Operator
Wood Treater

Main duties

Machine operators in this unit group perform some or all of the following duties:

- Operate and tend various wood processing equipment and machines to remove bark, knots and dirt from logs; reduce logs or sawmill waste into wood chips or flakes; stack and band lumber; screen wood chips; and produce waferboards, particle boards, hardboards and insulation boards
- Operate and tend conveyors, lathes, sanding machines and other equipment to peel and slice veneer from logs and log sections, and to glue, press, trim, sand and splice veneer sheets
- Operate and tend kilns, treating tanks and other equipment to dry lumber and other wood products, and to chemically treat and impregnate wood products with preservatives
- Observe equipment, panel indicators, video monitors and other instruments to detect malfunctions and ensure that processes are operating according to specifications
- Assemble plywood panels and repair plywood and veneer mechanically or manually
- Start up, shut down, set up and adjust process equipment and machines as required
- Complete and maintain production reports.

Employment requirements

- Completion of secondary school may be required.
- Several months of on-the-job training are provided.
- For lumber kiln operators, particle board operators and waferboard operators, some combination of college or company courses and up to a year of on-the-job training may be required.
- Previous experience as a labourer in wood processing may be required.

Additional information

- There is some mobility among jobs in this unit group.
- Progression to other positions in the wood, pulp and paper industries is possible with experience.

Classified elsewhere

- *Labourers in Wood, Pulp and Paper Processing* (9614)
- *Supervisors, Forest Products Processing* (9215)

9435 Paper Converting Machine Operators

Paper Converting Machine Operators operate various machines which fabricate and assemble paper products such as paper bags, containers, boxes, envelopes and similar articles. They are employed by paper products manufacturing companies.

Examples of titles classified in this unit group

Box Maker Operator
Carton Forming Machine Operator
Core Maker
Corrugator Operator
Envelope Maker Operator
Paper Bag Machine Operator
Paper Box Machine Operator

Main duties

Paper Converting Machine Operators perform some or all of the following duties:

- Operate machines which cut, fold, glue or clip paper and cardboard to make boxes, corrugated cartons and other articles
- Operate machines which glue paper to cardboard and cut it into required lengths
- Operate machines which press paper to form drinking cups and other containers
- Operate machines which cut, glue and fold paper to make envelopes or paper bags
- Operate other paper converting machines to form products such as paper tubes, cards, paper towels or diapers
- Clean and lubricate machine and perform other routine machine maintenance
- Set up machines.

Employment requirements

- Completion of secondary school is required by the pulp and paper industry and other large employers.
- Several weeks of on-the-job training are provided.
- Previous experience as a labourer within the same company may be required.

Additional information

- There is some mobility between jobs in this occupational group.

Classified elsewhere

- *Papermaking and Finishing Machine Operators* (9433)
- *Printing Machine Operators* (9471)
- *Printing Press Operators* (7381)

9436 Lumber Graders and Other Wood Processing Inspectors and Graders

Lumber Graders and Other Wood Processing Inspectors and Graders inspect and grade lumber, shingles, veneer, waferboard and similar wood products to identify defects, ensure conformance to company specifications and classify products according to industry standards. They are employed by sawmills, planing mills, wood treatment plants, waferboard plants and other wood processing companies.

Examples of titles classified in this unit group

Grader – Wood Processing
Grader Tallyman/woman – Wood Processing
Lumber Grader
Particle Board Grader
Plywood Grader
Plywood Inspector
Veneer Grader
Wood Measurer

Main duties

Lumber graders perform some or all of the following duties:

- Examine lumber visually for knots, holes, splits and other defects and sort for further drying, trimming or remanufacturing
- Measure lumber using callipers, gauges and tape measures to ensure specified thickness, length and width
- Classify and sort lumber according to industry standards and stamp lumber to indicate grade, wood type, moisture level and other characteristics
- Tally lumber
- Complete and maintain reports.

Other wood processing inspectors and graders perform some or all of the following duties:

- Inspect plywood panels, veneer sheets, panelboards, shingles and similar wood products visually for knots, holes, splits, straightness and other defects
- Mark defects and sort for repair or reprocessing
- Measure wood products to ensure conformance to specifications using standard measuring instruments
- Grade and label wood products according to quality standards
- Maintain and complete inspection and grading reports.

Employment requirements

- Completion of secondary school is usually required.
- On-the-job training and up to two weeks of classroom training are provided for lumber graders.
- Previous experience as a sawmill machine operator, other wood processing operator or as a labourer in wood processing is usually required for graders and inspectors in this unit group.
- Lumber graders require a lumber grader's licence issued by a provincial lumber association.

Additional information

- There is some mobility between employers processing similar wood products.

Classified elsewhere

- *Supervisors, Forest Products Processing* (9215)
- Forest product technologists (in 2211 *Applied Chemical Technologists and Technicians*)
- Log scalers (in 2223 *Forestry Technologists and Technicians*)
- Production technologists in sawmills (in 2233 *Industrial Engineering and Manufacturing Technologists and Technicians*)

9441 Textile Fibre and Yarn Preparation Machine Operators

Textile Fibre and Yarn Preparation Machine Operators operate machines to prepare textile fibres or to spin, wind or twist yarn or thread. They are employed by textile companies.

Examples of titles classified in this unit group

Card Tender
Opening and Blending Operator
Slasher Operator – Textiles
Spinning Operator – Textiles
Twisting Operator – Textiles
Warping Operator – Textiles
Wool Scourer

Main duties

Textile Fibre and Yarn Preparation Machine Operators perform some or all of the following duties:

- Operate and feed machines that wash, mix, blend, pick, card, lap, comb or draw fibres
- Operate and feed yarn texturizing machines
- Operate spinning or twisting frames
- Operate winding or reeling machines
- Patrol work area to check for broken yarns or product defects
- Tie broken threads
- Investigate machine stoppages
- Notify supervisor or mechanic of equipment malfunction.

Employment requirements

- Some secondary school education may be required.
- Several months of on-the-job training may be provided.

Additional information

- There is considerable mobility among occupations in this group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Supervisors, Textile Processing* (9216)

9442 Weavers, Knitters and Other Fabric-Making Occupations

Operators in this unit group operate machines to process yarn or thread into woven, non-woven and knitted products such as cloth, lace, carpets, rope, industrial fabric, hosiery and knitted garments or to quilt and embroider fabric. This unit group also includes workers who perform activities such as reproducing patterns, drawing-in and tying warps and setting up looms. They are employed by textile companies and by garment and mattress manufacturing companies.

Examples of titles classified in this unit group

Carpet Weaver
Drawer-in
Drawing-in Machine Operator
Embroidery Machine Operator
Hosiery Knitter
Knitter
Knitting Machine Operator
Loom Operator
Mattress Sewing Machine Operator
Pinning Machine Operator
Quilting Machine Operator
Tufting Operator
Warp-Knitting Machine Tender
Warp Tier-in
Weaver

Main duties

Operators in this unit group perform some or all of the following duties:

- Set up looms or other processing machines
- Read loom patterns and prepare loom pattern mechanisms for processing
- Operate looms to weave yarn or thread into textile fabrics or products
- Operate machines that produce twine, ropes or nets
- Operate batteries of knitting machines to produce knitted fabric, hosiery, garments or other products
- Operate carpet tufting machines, felt making needle-punch machines and other machines to produce textile products
- Operate large automatic multi-needle machines to embroider material or to sew lengths of several layers of material to make yard goods, quilts or mattress coverings
- Patrol machines and check fabrics or products for defects and to verify efficient operation
- Investigate machine stoppages
- Repair minor mechanical problems such as broken or defective needles
- Notify supervisor or repairers of mechanical malfunctions.

Employment requirements

- On-the-job training is provided for periods up to several months, depending on the complexity of the product, whether equipment set-up and maintenance is done by the operator, and the number of machines operated.
- Previous experience as a labourer in the same company may be required for some operators in this group.

Additional information

- Movement between employers may be limited by differences in machines and products.
- Progression to textile machinery mechanics and repairers or to supervisory positions is possible with experience.

Classified elsewhere

- *Sewing Machine Operators* (9451)
- *Supervisors, Textile Processing* (9216)
- *Textile Machinery Mechanics and Repairers* (7317)

9443 Textile Dyeing and Finishing Machine Operators

Textile Dyeing and Finishing Machine Operators operate machines to bleach, dye or finish yarn, thread, cloth or textile products. They are employed by textile manufacturing companies.

Examples of titles classified in this unit group

Autoclave Tender – Textiles
Bleaching Range Operator
Carpet Drying Machine Tender
Coater Operator – Textiles
Dye Range Operator
Dyer
Finishing Range Operator
Printing Operator – Textiles
Screen Printing Operator – Textiles

Main duties

Textile Dyeing and Finishing Machine Operators perform some or all of the following duties:

- Operate a variety of machines to bleach, dye, coat or finish fabric, thread, yarn or other textile products
- Set up machines for proper processing
- Mix dyes or chemicals according to established formulas
- Examine products for defects and to ensure adherence to quality standards
- Notify supervisor or mechanic in the event of equipment malfunction.

Employment requirements

- Completion of secondary school may be required.
- On-the-job training is provided for periods up to several months, depending on the complexity of the process and the number of machines operated.

Additional information

- Progression is possible within the group to operate more complex dye ranges and textile printing equipment.
- Progression to supervisory positions usually requires completion of a college program in textiles, chemistry or a related subject.

Classified elsewhere

- *Supervisors, Textile Processing* (9216)
- Master dyers and textile colour technologists (in 2211 *Applied Chemical Technologists and Technicians*)

9444 Textile Inspectors, Graders and Samplers

Textile Inspectors, Graders and Samplers prepare samples and inspect and grade textile products. They are employed by textile companies.

Examples of titles classified in this unit group

Cloth Inspector
Cloth Grader
Inspector – Textiles
Perch Operator
Quality Control Inspector – Textiles
Sampler – Textiles
Textile Grader
Yarn Inspector

Main duties

Textile Inspectors, Graders and Samplers perform some or all of the following duties:

- Examine fabric or products for conformity to quality standards
- Mark defects
- Repair minor defects
- Grade products
- Sort products by style, colour, size, length or other criteria
- Measure or weigh products
- Record information on products inspected
- May package products.

Employment requirements

- Some secondary school education may be required.
- On-the-job training is provided.
- Experience as a weaver, knitter or other fabric-making operator may be required for inspection of more valuable and complex products.

Classified elsewhere

- *Supervisors, Textile Processing* (9216)

9451 Sewing Machine Operators

Sewing Machine Operators operate sewing machines to sew fabric, fur, leather or synthetic materials to produce or repair garments and other articles. They are employed in clothing, footwear, textile products, fur products and other manufacturing establishments and by furriers.

Examples of titles classified in this unit group

Fur Sewing Machine Operator
Leather Products Sewing Machine Operator
Lining Stitcher
Sample Maker
Sample Sewer
Serging Machine Operator
Sewing Machine Operator
Shoe Sewer

Main duties

Sewing Machine Operators perform some or all of the following duties:

- Operate single, double or multi-needle sewing machines to join sections of garments or other articles into finished products on a piece-work or production basis
- Operate fur sewing machines to join fur pelt strips to required size and shape and join pelts into garment sections or shells
- Operate stitching machines to sew leather parts together for leather garments, handbags, shoes and other leather articles
- Operate serging machines to sew and overcast edges of material simultaneously
- Operate tackers, buttonhole makers and fusing, hemmer and other machines to perform various operations in the fabrication of garments and other articles
- Operate sewing machines, sergers and other machines to repair garments and other articles during the manufacturing process.

Employment requirements

- Some secondary school education is usually required.
- Experience operating a sewing machine is usually required.
- On-the-job training may be provided.

Additional information

- Sewing machine operators may progress to supervisory positions with experience.

Classified elsewhere

- *Fabric, Fur and Leather Cutters* (9452)
- *Tailors, Dressmakers, Furriers and Milliners* (7342)
- Supervisors of sewing machine operators (in 9225 *Supervisors, Fabric, Fur and Leather Products Manufacturing*

9452 Fabric, Fur and Leather Cutters

Fabric cutters cut fabric to make parts for garments, linens and other articles. Fur cutters cut fur pelts to make parts for garments and other fur articles. Leather cutters cut leather to make parts for shoes, garments and other leather articles. Fabric cutters are employed by clothing and textile manufacturers and other manufacturers of fabric products. Fur cutters are employed by furriers and fur products manufacturers. Leather Cutters are employed by shoe and other leather products manufacturers.

Examples of titles classified in this unit group

Clothing Cutter
Computer Cutter
Die Cutter
Fabric Cutter
Fur Cutter
Glove Cutter
Leather Cutter
Sample Cutter
Shoe Cutter

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Fabric cutters place patterns on top of layers of fabric and cut fabric following patterns, using electric or manual knives or cutters; activate computerized cutting devices to cut layers of fabric; and may cut fabric samples.
- Fur cutters cut fur skins in diagonal strips to specified length and shape of pelt using furrier's knives and cutters; number pelts to indicate their location on pattern; may sort or match skins; and may prepare fur samples.
- Leather cutters select leather and cutting dies for leather goods and shoe parts according to specifications; position leather on cutting bed of machine, maximizing usage according to skin grain, skin flaws and skin stretch; operate machine to cut leather or cut single leather skins by hand to make leather products; and may cut leather samples.

Employment requirements

- Some secondary school education is usually required.
- Experience as a fabric, fur or leather cutter is required for fabric, fur or leather sample cutters.
- Some on-the-job training is provided for occupations in this unit group.
- Several years of on-the-job training are provided for fur cutters.

Additional information

- Progression to supervisory positions is possible with experience.
- There is little mobility among the different kinds of cutters in this unit group.

Classified elsewhere

- *Supervisors, Fabric, Fur and Leather Products Manufacturing* (9225)
- *Tailors, Dressmakers, Furriers and Milliners* (7342)

9453 Hide and Pelt Processing Workers

Hide and Pelt Processing Workers trim, scrape, clean, tan, buff and dye animal hides, pelts or skins to produce leather stock and finished furs. They are employed by leather tanning, fur dressing and leather and fur dyeing establishments.

Examples of titles classified in this unit group

Beating Machine Tender
Leather Buffer
Leather Stretcher
Pelt Dresser
Pickler
Shaving Machine Tender
Splitter
Tanner

Main duties

Hide and Pelt Processing Workers perform some or all of the following duties:

- Cut particles of flesh and fat from hides or pelts prior to processing using hand and powered cutting knives and remove loose hair from hides and pelts
- Operate machines to remove flesh or hair from hides, skins or pelts and shave hides to uniform thickness
- Shear fur or wool hides to produce pelts with hair of specified or uniform length
- Prepare solutions in vats or revolving drums and immerse hides and skins to clean, dehair, pickle, dye, oil or tan
- Immerse pelts to clean, soften and preserve
- Operate machines to polish or roughen hides or skins to specified finish
- Tint or dye furs to enhance natural shades of fur.

Employment requirements

- On-the-job training is usually provided.

Additional information

- There is some mobility among jobs in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Supervisors of hide and pelt processing workers (in 9225 *Supervisors, Fabric, Fur and Leather Products Manufacturing*)

9454 Inspectors and Testers, Fabric, Fur and Leather Products Manufacturing

Inspectors and testers in this unit group inspect and grade hides, pelts and leather, or garments and other manufactured fabric, fur and leather products. They are employed by leather tanning and fur dressing establishments or by garment, fur and leather products manufacturers.

Examples of titles classified in this unit group

Clothing Inspector
Cushion and Cover Inspector
Garment Inspector
Fur Grader
Hide Grader
Leather Goods Inspector
Pelt Grader
Seconds Inspector-Grader
Shirt Inspector

Main duties

Inspectors and testers in this unit group perform some or all of the following duties:

- Inspect and grade animal hides, pelts or leather according to size, condition and weight
- Inspect garments and similar products for defects, such as seam splits, puckers, missing buttons and colour and shape variations
- Verify fit or size by placing garment over a form or by measuring products
- Trim excess material and loose threads using scissors
- Remove lint using a brush or lint remover and remove spots using cleaning solution
- Repair minor defects using a needle and thread
- Record information on the number and nature of defects
- Grade and sort finished products and tag according to size, style and quality.

Employment requirements

- Some secondary school education may be required.
- Work experience in the manufacturing of the products under examination is usually required.

Additional information

- There is little mobility among the different inspectors and testers in this unit group.

Classified elsewhere

- *Textile Inspectors, Graders and Samplers* (9444)

9461 Process Control and Machine Operators, Food and Beverage Processing

Process control and machine operators in this unit group operate multi-function process control machinery or single function machines to process and package food and beverage products. They are employed in fruit and vegetable processing plants, dairies, flour mills, bakeries, sugar refineries, meat plants, breweries and other food and beverage processing establishments.

Examples of titles classified in this unit group

Bakery Machine Operator
Bottling Machine Operator
Brewer
Canning Machine Operator
Chocolate Refiner
Control-Room Operator, Food and Beverage Processing
Fermenter Operator
Freezer Operator
Fryer Operator
Meat Grinder
Mixer Operator, Dry Foods
Pasteurizer Operator
Sugar Boiler

Main duties

Process control operators in this unit group perform some or all of the following duties:

- Operate multi-function process control machinery through control panels, computer terminals or other control systems to grind, extract, mix, blend, cook or otherwise process food products and to bag, box or otherwise package food products
- Operate multi-function process control machinery to grind, extract, mix, blend, distill, ferment or otherwise process alcoholic or non-alcoholic beverages and to bottle, can or otherwise package beverages
- Observe gauges, computer printouts and video monitors to verify specified processing conditions and make adjustments to process variables such as cooking times, ingredient inputs, flow rates and temperature settings
- Maintain shift log of production and other data.

Machine operators in this group perform some or all of the following duties:

- Set up and adjust processing and packaging machines preparatory to operation
- Operate single function machines to grind, extract, mix, blend, freeze, cook or otherwise process food or beverage products and to box, can or otherwise package food or beverage products
- Check products for defects and to ensure conformance to company standards and perform corrective machine adjustments as necessary
- Record production information such as quantity, weight, size, date and type of products packaged.

Employment requirements

- Completion of secondary school may be required.
- Experience as a machine operator, food and beverage processing is usually required for process control operators.
- Experience as a labourer, food and beverage processing may be required for machine operators.

Additional information

- There is little mobility among the various types of process control operators within the food and beverage processing industry.
- Process control operators may progress to supervisory positions in food and beverage processing with experience.
- There is mobility among machine operators within the food and beverage processing industry.
- Machine operators may progress to process control operators or supervisors in food and beverage processing with experience.

Classified elsewhere

- *Bakers* (6252)
- *Butchers and Meat Cutters, Retail and Wholesale* (6251)
- *Fish Plant Workers* (9463)
- *Industrial Butchers and Meat Cutters, Poultry Preparers and Related Workers* (9462)
- *Labourers in Fish Processing* (9618)
- *Labourers in Food, Beverage and Tobacco Processing* (9617)
- *Supervisors, Food, Beverage and Tobacco Processing* (9213)

9462 Industrial Butchers and Meat Cutters, Poultry Preparers and Related Workers

Workers in this unit group prepare meat and poultry for further processing, for packaging or for marketing. They are employed in meat and poultry slaughtering, processing and packing establishments.

Examples of titles classified in this unit group

Beef Boner
Ham Cutter
Industrial Butcher
Industrial Meat Cutter
Poultry Preparer
Slaughterer
Meat Trimmer

Main duties

The following is a summary of main duties for some occupations in this unit group:

- Industrial butchers slaughter livestock using stunning devices and knives; remove viscera and other inedible parts from carcasses; split carcasses into smaller portions to facilitate handling; and may slaughter cattle, calves and sheep as prescribed by religious laws.
- Industrial meat cutters cut beef, lamb, pork or veal carcasses or sides or quarters of carcasses into primal cuts for further cutting, processing or packaging; remove bones from meat; and cut meat and poultry into specific cuts for institutional, commercial or other wholesale use.
- Poultry preparers slaughter poultry and remove inedible parts; remove feathers and singe and wash poultry to prepare for further processing or packaging.
- Trimmers remove skin, excess fat, bruises or other blemishes from carcasses or meat portions.

Employment requirements

- Completion of secondary school may be required.
- For industrial meat cutters, completion of a program in industrial meat cutting
  or
  Experience as an industrial butcher or trimmer is required.
- On-the-job training is usually provided for industrial butchers, poultry preparers and trimmers.

Additional information

- Progression to supervisory positions is possible with experience.
- Industrial meat cutters may progress to inspecting, testing and grading jobs.

Classified elsewhere

- *Butchers and Meat Cutters, Retail and Wholesale* (6251)
- Meat graders (in 9465 *Testers and Graders, Food and Beverage Processing*)
- Meat inspectors (in 2222 *Agricultural and Fish Products Inspectors*)
- Supervisors, meat packing (in 9213 *Supervisors, Food, Beverage and Tobacco Processing*)

9463 Fish Plant Workers

This unit group includes fish plant machine operators, who set up and operate machinery to process and package fish products, and fish plant cutters and cleaners, who cut, trim and clean fish by hand. Fish Plant Workers are employed in fish processing plants.

Examples of titles classified in this unit group

Fish Cake Maker
Fish Canning Machine Operator
Fish Cleaner and Cutter
Fish Cutting Machine Operator
Fish Plant Worker
Shellfish Processor
Shellfish Separator Tender
Shellfish Shucker
Trimmer

Main duties

Fish plant machine operators perform some or all of the following duties:

- Set up and operate machines to clean, cut, cook, smoke, dehydrate or otherwise process fish products
- Set up and operate machines to can, bag, box or otherwise package fish products
- Check products and packaging for defects and to ensure conformance to company standards and perform corrective machine adjustments as required
- Record production information such as quantity, weight, date and type of products packaged.

Fish plant cutters and cleaners perform some or all of the following duties:

- Cut, clean and trim fish prior to marketing or further processing
- Scrape away scales, cut fish, separate fillets and remove scrap parts using knife
- Check fish fillets to determine optimal number and size of fillet sections, cut sections according to specifications and place in container for weighing
- Disjoint and remove meat from lobsters or other crustaceans preparatory to canning or further processing.

Employment requirements

- Some secondary school education may be required.
- On-the-job training is required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Labourers in Fish Processing* (9618)
- *Supervisors, Food, Beverage and Tobacco Processing* (9213)

9464 Tobacco Processing Machine Operators

Tobacco Processing Machine Operators operate machines to prepare and treat raw tobacco leaves or to produce and package tobacco products such as cigarettes and cigars. They are employed in leaf tobacco processing and tobacco products plants.

Examples of titles classified in this unit group

Cigar Maker
Cigarette Machine Tender
Cleaning and Classifying Operator – Tobacco Processing
Conveyor Tender – Tobacco Processing
Dryer Tender – Tobacco Processing
Module Tender – Tobacco Processing
Tobacco Blender
Tobacco Packaging Machine Tender

Main duties

Tobacco Processing Machine Operators perform some or all of the following duties:

- Operate machines that blend, flavour, condition, dry, flatten, strip or cut raw tobacco leaves
- Tend cigarette, cigar and other tobacco processing machines
- Clear blockages as required on machines and inform supervisor of mechanical malfunctions or product irregularities
- Clean machines and immediate work areas.

Employment requirements

- Some secondary school education may be required.
- Experience as a labourer in the tobacco processing industry may be required.

Additional information

- Progression to supervisory positions in the tobacco processing industry is possible with experience.

Classified elsewhere

- *Supervisors, Food, Beverage and Tobacco Processing* (9213)
- Tobacco testers and graders (in 9465 *Testers and Graders, Food and Beverage Processing*)

9465 Testers and Graders, Food and Beverage Processing

Testers and graders in this unit group test or grade ingredients and finished food, beverage or tobacco products to ensure conformance to company standards. They are employed in fruit and vegetable processing plants, dairies, flour mills, bakeries, sugar refineries, fish plants, meat plants, breweries and other food, beverage and tobacco processing plants.

Examples of titles classified in this unit group

Beef Grader
Beer Tester
Cheese Grader
Fish Grader
Milk Grader
Poultry Grader
Product Tester, Food and Beverage Processing
Tobacco Grader

Main duties

Testers and graders, in this unit group perform some or all of the following duties:

- Take samples of products at various stages of processing
- Examine ingredients or finished products by sight, touch, taste and smell or weigh materials to ensure conformance to company standards
- Conduct routine tests for product specifications such as colour, alcohol content, carbonation, fat content and packaging
- Grade or sort raw materials or finished products
- Advise supervisors of ingredient or product deficiencies.

Employment requirements

- Completion of secondary school may be required.
- Experience as a machine operator or labourer in the food and beverage processing industry may be required.
- On-the-job training is usually provided.

Additional information

- There is little mobility among the various types of testers and graders in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Agricultural and Fish Product Inspectors* (2222)
- *Supervisors, Food, Beverage and Tobacco Processing* (9213)
- Quality control technologists and technicians (in 2211 *Applied Chemical Technologists and Technicians*)

9471 Printing Machine Operators

This unit group includes workers who operate laser printers, computerized high speed colour copiers and other printing machines to print text, illustrations and designs on a wide variety of materials such as paper, plastic, glass, leather, and metal. They are employed in rapid printing services, commercial printing companies and in manufacturing and other establishments that have in-house printing facilities.

Examples of titles classified in this unit group

Colour Copier Operator
Electronic Sign Maker Operator
Laser Printer Operator
Printing Machine Operator
Printing and Finishing Machine Operator
Screen Print Operator
Silkscreening Machine Operator
Wallpaper Printer

Main duties

Printing Machine Operators perform some or all of the following duties:

- Review work order to determine job specifications, such as ink colour and quantity required
- Set up and make adjustments to printing machine, such as filling ink or paint reservoirs and loading stock
- Input codes and key in programming data on console keyboard of computerized printers
- Operate and monitor printing machines during print run and make adjustments as required
- Clean machines and replace worn parts.

Employment requirements

- Completion of secondary school may be required.
- Completion of college or other courses in printing may be required.
- On-the-job training is provided.

Classified elsewhere

- *Printing Press Operators* (7381)
- *Supervisors, Printing and Related Occupations* (7218)
- Textile printing machine operators (in 9443 *Textile Dyeing and Finishing Machine Operators*)

9472 Camera, Platemaking and Other Pre-Press Occupations

This unit group includes workers who operate graphic arts cameras and scanners, assemble film and negatives and prepare, engrave and etch printing plates or cylinders for various types of printing presses. They are employed in firms that specialize in colour graphics or platemaking and cylinder preparation, commercial printing companies, newspapers, magazines, and in various establishments in the public and private sectors that have in-house printing departments.

Examples of titles classified in this unit group

Camera Operator, Graphic Arts
Cylinder Preparer – Printing
Dot Etcher
Film Stripper/Assembler
Platemaker
Pre-press Technician
Printing Plate Engraver
Scanner Operator
Screenmaker
Studio Image Processing System Operator

Main duties

The following is a summary of main duties for some occupations in this group:

- Graphic arts camera operators set up and adjust black and white or colour separation process cameras to convert graphic art and photographs into film for assembly and exposure onto printing plates or cylinders.
- Cylinder preparers grind and polish press cylinders; expose and lay down carbon tissue; and, etch or engrave cylinders using hand tools, etching machines, photogravure or laser processes to produce cylinders for gravure presses.
- Film strippers/assemblers assemble and position (by hand or by using automated equipment) pieces of film containing all parts of a printing job to produce flats or composite negatives for preparing printing plates or cylinders.
- Platemakers operate vacuum frames, plate processors and step and repeat machines to produce printing plates for various types of presses.
- Pre-press technicians operate various computer-controlled studio systems to perform colour separation, retouching and editing that allow changes to be made to a colour negative for printing purposes, plan page layouts and electronically alter shape, size and positions of illustrations and text.
- Scanner operators operate computerized scanning machines to make colour separations and corrections from colour copy or transparencies for use in preparing printing plates or cylinders.

Employment requirements

- Completion of secondary school is required.
- Completion of a college program in graphic arts technology
  or
  A four to five-year apprenticeship program in printing and graphic arts
  or
  A combination of on-the-job training and specialized college, industry or other courses is required.
- Trade certification for some occupations in this group is available, but not compulsory, in Ontario, Alberta and the Northwest Territories.

Classified elsewhere

- *Graphic Arts Technicians* (5223)
- *Graphic Designers and Illustrating Artists* (5241)
- *Supervisors, Printing and Related Occupations* (7218)
- Typesetters and desktop publishing operators (in 1423 *Typesetters and Related Occupations*)

9473 Binding and Finishing Machine Operators

Binding and Finishing Machine Operators set up, operate or oversee the operation of specific machines, equipment or computerized units that bind and finish printed material. Workers who perform finishing operations in the paper, carton and packaging industries, as well as those who encode and stamp plastic cards are included in this unit group. They are employed by binderies, commercial printing companies, newspapers, magazines, and other publishing companies, and establishments in both the public and private sectors that have in-house printing, binding and finishing departments.

Examples of titles classified in this unit group

Binder – Printing
Binder and Finisher
Bindery Assistant
Bindery Operator
Book Binder, Machine
Bookbinding Machine Operator
Cerlox Binder Operator
Cutter Operator – Printing
Finishing Machine Operator
Gathering Machine Operator – Printing
Gold Leaf Stamper
Laminating Machine Operator
Perforator Operator
Stitcher Operator

Main duties

The following is a summary of the main duties for some occupations in this unit group:

- Binding machine operators set up and operate various specialized equipment and machines that cut, fold, gather, stitch and trim brochures, magazines, books, business forms and other printed material.
- Finishing machine operators set up and operate various specialized equipment and machines that die cut, emboss, imprint, laminate, gold stamp and perform other finishing operations on printed material.

Employment requirements

- Completion of secondary school is usually required.
- Completion of a college program in graphic arts technology
  or
  A four-year apprenticeship program in printing
  or
  A combination of on-the-job training and specialized college, industry or other courses may be required.

Additional information

- Progression to supervisory positions is possible with experience.
- There is mobility among various types of binding machine operators in this group.

Classified elsewhere

- *Supervisors, Printing and Related Occupations* (7218)
- Feeders, loaders, offbearers and similar occupations (in 9619 *Other Labourers in Processing, Manufacturing and Utilities*)
- Hand bookbinders (in 5244 *Artisans and Craftspersons*)

9474 Photographic and Film Processors

Photographic and Film Processors process and finish still photographic film and motion picture film. They are employed in film processing laboratories and retail photofinishing establishments.

Examples of titles classified in this unit group

Dark Room Technician
Film Developer
Film Printing Machine Operator
Film Processor
Photofinisher
Photograph Developer
Photograph Inspector
Photographic Processor

Main duties

Photographic and Film Processors perform some or all of the following duties:

- Operate equipment to develop negatives and slides, and to print black and white and colour photographs
- Operate photographic enlarging equipment to produce prints and enlargements from negatives
- Operate equipment to develop motion picture film
- Tend automatic equipment in retail establishments to develop colour negatives, prints and slides
- Operate equipment to transfer film to video tape
- Retouch photographic negatives or original prints to correct defects
- Splice film and mount film on reels
- Measure and mix chemicals required for processing
- Inspect rolls of photographic prints for conformance to specifications; or motion picture film to detect defects in developing and printing.

Employment requirements

- Completion of secondary school is usually required.
- For employment in film processing laboratories, completion of a college or other specialized program
  or
  Extensive related experience is required.
- For employment as a film printing machine operator in retail outlets, on-the-job training is provided.

Additional information

- Progression is possible from automatic machine tenders in retail establishments to laboratory processing occupations.
- There is mobility among occupations within laboratory processing operations.

Classified elsewhere

- Film strippers and assemblers and negative retouchers in the printing or graphic arts industry (in 9472 *Camera, Platemaking and Other Pre-Press Occupations*)
- Supervisors of photographic and film processors (in 7218 *Supervisors, Printing and Related Occupations*)

9481 Aircraft Assemblers and Aircraft Assembly Inspectors

Aircraft assemblers assemble, fit and install pre-fabricated parts to manufacture fixed wing or rotary wing aircraft or aircraft sub-assemblies. Aircraft assembly inspectors inspect aircraft assemblies for adherence to engineering specifications. They are employed by aircraft and aircraft sub-assembly manufacturers.

Examples of titles classified in this unit group

Aircraft Assembler
Aircraft Inspector, Assembly
Airframe Assembler
Bench and Structural Assembler
Bench Fitter Mechanic
Rigger, Aircraft Assembly
Wing Tank Mechanic

Main duties

Aircraft assemblers perform some or all of the following duties:

- Read and interpret aircraft assembly diagrams
- Assemble and fit pre-fabricated parts to form sub-assemblies, working at benches or directly on an aircraft structure
- Assemble, fit and install pre-fabricated parts and sub-assemblies such as aircraft skins, flight controls, rigging, hydraulics and other mechanical systems.

Aircraft assembly inspectors perform some or all of the following duties:

- Inspect aircraft assemblies, using measuring and testing equipment, for adherence to engineering specifications
- Inspect assemblies for alignment, symmetry, dimensions, fit and quality of workmanship
- Complete detailed inspection documentation.

Employment requirements

- Completion of secondary school is required.
- Completion of a college or other program in aviation or aeronautical technology, with emphasis in aircraft manufacturing, may be required.
- Aircraft assemblers receive several months of on-the-job and classroom training.
- Aircraft assembly inspectors require experience as an aircraft assembler.

Additional information

- Aircraft assemblers and assembly inspectors may progress to supervisory positions with experience.

Classified elsewhere

- *Aircraft Mechanics and Aircraft Inspectors* (7315)
- Aircraft engine assemblers (in 7316 *Machine Fitters*)
- Aircraft painters (in 9496 *Painters and Coaters, Manufacturing*)
- Supervisors of aircraft assemblers or inspectors (in 9226 *Supervisors, Other Mechanical and Metal Product Manufacturing*)

9482 Motor Vehicle Assemblers, Inspectors and Testers

Motor vehicle assemblers assemble and install prefabricated motor vehicle parts and components to form subassemblies and finished motor vehicles. Motor vehicle inspectors and testers inspect and test parts, subassemblies and finished products to ensure proper performance and conformity to quality standards. They are employed in plants which manufacture automobiles, vans and light trucks.

Examples of titles classified in this unit group

Assembly Inspector
Auto Assembly Worker
Body Assembler
Car Assembler
Chassis Inspector
Door Fitter
Light Truck Assembler
Motor Vehicle Assembler
Test Driver
Transmission Installer
Van Assembler

Main duties

Motor vehicle assemblers perform some or all of the following duties:

- Bolt, screw, clip, weld, solder or otherwise fasten motor vehicle parts and components together using hand and power tools and equipment
- Operate and tend automated assembling equipment such as robotic and fixed automation equipment
- Connect cables, tubes and wires to complete assemblies and installations
- Position and install parts and subassemblies such as engines, transmissions, door panels or instrument panels using hand and power tools and other aids like overhead hoists
- Fit and adjust parts such as doors, hoods and trunk lids.

Motor vehicle inspectors and testers perform some or all of the following duties:

- Check motor vehicle exterior priming and colour coats, sealers and glazers and mark defects to be repaired
- Test motor vehicle electrical assemblies, equipment and wiring for proper performance using testing devices such as meters, analyzers and timing lights
- Inspect fully assembled motor vehicles for defects and to ensure that previously noted defects have been corrected
- Drive and test motor vehicles on roll testing device to ensure that transmission, axle, engine and brakes function properly
- Record and report motor vehicle defects.

Employment requirements

- Completion of secondary school is usually required.
- Skills required for occupations in this unit group are normally acquired through on-the-job training.

Additional information

- Mobility is possible to jobs in the same production department.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Supervisors, Motor Vehicle Assembling* (9221)
- Assemblers of heavy trucks, trailers and buses (in 9486 *Mechanical Assemblers and Inspectors*)
- Automobile assembly painters and coaters (in 9496 *Painters and Coaters, Manufacturing*)
- Automotive engine, clutch and transmission assemblers (in 9486 *Mechanical Assemblers and Inspectors*)

9483 Electronics Assemblers, Fabricators, Inspectors and Testers

Electronics assemblers and fabricators assemble and fabricate electronic equipment, parts and components. Electronics inspectors and testers inspect and test electronic and electromechanical assemblies, subassemblies, parts and components to ensure conformance to prescribed standards. They are employed in electronics manufacturing plants.

Examples of titles classified in this unit group

Capacitor Assembler
Circuit Board Assembler
Component Inserting Machine Operator
Crystal Final Tester
Electronics Assembler
Electronics Inspector
Inspector, Printed Circuit Board Assembly
Tester, Electronic Components
Wafer Fabrication Operator
Wave Soldering Machine Operator
Wiring and Assembly Operator

Main duties

Electronics assemblers perform some or all of the following duties:

- Solder and manually assemble various electronic components such as resistors, diodes, transistors, capacitors, integrated circuits, wires and other electronic parts to designated locations on printed circuit boards
- Assemble microcircuits requiring fine hand assembly, the use of microscopes and adherence to cleanroom procedures
- Install, mount, fasten, align and adjust parts, components, wiring and harnesses to subassemblies and assemblies using hand and small power tools
- Operate automatic and semi-automatic machines to position, solder and clean prescribed components on printed circuit boards.

Electronics fabricators perform some or all of the following duties:

- Operate and monitor process equipment including automatic and semi-automatic machines to fabricate electronic components, solder, clean, seal and stamp components and perform other process operations as specified
- Set up process equipment and adhere to cleanroom procedures as required.

Electronics inspectors perform some or all of the following duties:

- Inspect electronic components and assemblies to ensure correct component selection and placement, wiring and soldering quality, proper pin insertions, location and diameter of plated holes, breaks in circuitry and line spacing in printed circuit board and other specified requirements while products are being assembled or fabricated
- Check final assembly for finish, labelling and packaging methods
- Check mechanical dimensions and perform "go-no-go" electrical tests
- Identify and mark acceptable and defective assemblies and return faulty assemblies to production for repair
- Collect, record and summarize inspection results.

Electronics testers perform some or all of the following duties:

- Operate various test equipment and tools to perform simple electrical and continuity testing of electronic components, parts and systems
- Set up and operate automatic testing equipment to locate circuit and wiring faults, shorts and component defects
- Compare test results to specifications and set parts or products aside for repair or replace components or parts as indicated by test equipment
- May conduct life tests (burn-ins) on components, subassemblies and assemblies
- Maintain test result reports.

9483 Electronics Assemblers, Fabricators, Inspectors and Testers

Employment requirements

- Some secondary school education is required for electronics assemblers, fabricators, inspectors and testers.
- Electronics testers may require post-secondary courses in basic electronic theory, testing techniques and testing equipment.
- Electronics inspectors and testers may require experience as an electronics assembler or component fabricator.
- Progression from electronics assembler or component fabricator to electronics inspector or tester is possible with additional training and experience.

Classified elsewhere

- *Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing* (9484)
- *Electronic Service Technicians (Household and Business Equipment)* (2242)

9484 Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing

Assemblers in this unit group assemble prefabricated parts to produce household, commercial and industrial appliances and equipment. Inspectors in this unit group inspect and test assembled products. Workers who set up and prepare assembly lines for operation are included in this unit group. Workers in this unit group are employed by electrical appliance and electrical equipment manufacturing companies.

Examples of titles classified in this unit group

Assembler, Electrical Appliances
Circuit Breaker Assembler
Clothes Dryer Assembler, Electric
Coffeemaker Assembler
Dishwasher Assembler
Hair Dryer Assembler
Inspector, Electrical Appliance Assembly
Inspector, Electrical Controls Assembly
Lawnmower Assembler, Electric
Production Assembler, Electrical Equipment
Refrigerator Assembler, Electric

Main duties

Assemblers in this unit group perform some or all of the following duties:

- Assemble prefabricated parts on an assembly line, or at work benches using screw guns and other hand and power tools
- Assemble small and large household electrical appliances such as coffeemakers, toasters, vacuum cleaners, lawnmowers, refrigerators and dishwashers
- Assemble small transformers, small electrical motors and transmissions used in appliances or other electrical products
- Assemble circuit breakers, switches or other electrical control equipment and position and fasten components such as springs, toggles or other parts into assembly casings
- Wind coils and armatures for small electric motors and transformers
- Perform minor repairs to products rejected from production assembly line
- Set up assembly line with materials and supplies required for production, and set up and adjust production tools.

Inspectors and testers in this unit group perform some or all of the following duties:

- Check products at different stages of production for visual defects and faulty electrical and mechanical connections, or operate automatic or other testing equipment to ensure product quality
- Identify and mark acceptable and defective assemblies and return faulty assemblies to production for repair
- Collect, record and summarize inspection results.

Employment requirements

- Some secondary school education is usually required.
- On-the-job training is provided.
- Inspectors may require experience as an assembler in the same company.
- Some types of inspectors may require completion of an electronics college program.

Additional information

- With experience assemblers may progress to inspecting and testing positions.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Electrical Appliance Servicers and Repairers* (7332)
- *Electrical Mechanics* (7333)
- *Machine Operators and Inspectors, Electrical Apparatus Manufacturing* (9487)
- *Supervisors, Electrical Products Manufacturing* (9223)
- Assemblers of electronics products, such as televisions, radios and computers (in 9483 *Electronics Assemblers, Fabricators, Inspectors and Testers*)
- Assemblers of heavy-duty electrical motors, transformers and related equipment (in 9485 *Assemblers, Fabricators and Inspectors, Industrial Electrical Motors and Transformers*)

9485 Assemblers, Fabricators and Inspectors, Industrial Electrical Motors and Transformers

This unit group includes workers who assemble, fabricate, fit, wire and inspect heavy-duty industrial electrical equipment. They are employed by manufacturers of industrial electric motors, transformers, control equipment, railway locomotives, transit vehicles and other heavy electrical equipment.

Examples of titles classified in this unit group

Assembler and Wirer, Motors and Generators
Assembler, Switchgear and Control Panel
Coil Winder, Transformer
Control Panel Assembler
Electrical Fitter
Fitter and Assembler, AC and DC Motors
Inspector and Tester, AC and DC Motors
Inspector, Electrical Control Panel
Panelboard Assembler – Industrial Electrical Equipment
Power Transformer Assembler
Switchgear Fitter Wirer
Transformer Inspector
Transformer Winder
Winder, AC and DC Armatures
Wirer, Electrical Switchgear Panels

Main duties

Assemblers in this unit group perform some or all of the following duties:

- Assemble and fit metal and other prefabricated parts to close tolerances according to blueprints to build heavy-duty electric motors or transformers
- Assemble stators or armatures for heavy-duty electric motors; compress steel laminations to build transformer cores; assemble windings into core using overhead cranes and make electrical connections using crimping, brazing and soldering equipment
- Assemble and fit electrical motor or transformer auxiliary equipment such as bushings, tap changes, conduit boxes, heating devices, protective equipment and cooling equipment
- Set up and adjust production machinery and equipment, such as coil winding machines, for the manufacture of heavy-duty electrical equipment
- May perform basic tests on electric motors.

Electrical fitters and wirers perform some or all of the following duties:

- Interpret engineering drawings, electrical schematics and blueprints
- Fit motor starters, contactors, capacitors, circuit breakers, voltage regulators, printed circuit boards, or other electrical control devices into switchboards and panelboards to produce automated processing control equipment, electrical distribution panels, or other industrial electrical control equipment
- Wire electrical connections for switchboards and panelboards
- Assemble panelboard and switchboard cabinets and install bus bars used to carry heavy electrical current
- May operate metal fabricating equipment to fabricate or modify bus bars.

Inspectors in this unit group perform some or all of the following duties:

- Monitor production and troubleshoot production problems
- Check final assembly of electric motors, transformers or control equipment for adherence to quality control standards
- Collect, record and summarize inspection result.

Employment requirements

- Completion of secondary school is usually required.
- College courses in electricity or electro-technology may be required.
- Several years on-the-job training is usually provided.
- Set-up persons, inspectors and leadhands in this unit group may require experience as an assembler, fitter or wirer in the same company.

9485 Assemblers, Fabricators and Inspectors, Industrial Electrical Motors and Transformers

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing* (9484)
- *Electrical Mechanics* (7333)
- *Supervisors, Electrical Products Manufacturing* (9223)
- Assemblers of small electrical motors, transformers, circuit breakers or similar products (in 9484 *Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing*)
- Electrical technicians who test heavy-duty electric motors, transformers or other industrial electrical equipment (in 2241 *Electrical and Electronics Engineering Technologists and Technicians*)

9486 Mechanical Assemblers and Inspectors

Assemblers in this unit group assemble a wide variety of mechanical products such as trucks, buses, snowmobiles, garden tractors, automotive engines, transmissions, outboard motors, gear boxes, hydraulic pumps and sewing machines. Inspectors in this unit group check and inspect subassemblies and finished products to ensure proper quality and product specifications. They are employed by machinery and transportation equipment manufacturers and by other manufacturing companies.

Examples of titles classified in this unit group

Automotive Engine Assembler
Garden Machinery Assembler
Gearbox Assembler
Gearcase Assembler
Hydraulic Hoist Assembler
Mechanical Assembler
Sewing Machine Assembler
Snowmobile Assembler
Tractor Assembler
Transmission Assembler
Truck Assembler
Truck Assembly Inspector
Truck Trailer Assembler
Vending Machine Assembler

Main duties

Assemblers in this unit group perform some or all of the following duties:

- Assemble, fit and install prefabricated parts to form subassemblies or finish products using hand and power tools
- Position, align and adjust parts for proper fit and assembly and connect cables, tubes and wires
- Fasten parts together using bolting and riveting equipment or other fastening and joining techniques
- Operate or tend automated assembling equipment, such as robotics and fixed automation equipment
- Operate small cranes to transport or position larger parts as required.

Inspectors in this unit group perform some or all of the following duties:

- Check subassemblies and inspect finished products for proper quality
- Check mechanical assemblies and subassemblies for alignment and proper functioning
- Test and check electrical assemblies and wiring for proper connections
- Perform minor adjustments and repairs.

Employment requirements

- Some secondary school education is required.
- Up to two years of on-the-job training are provided.
- Experience as a mechanical assembler may be required for inspectors in this unit group.

Additional information

- Progression to supervisory positions is possible with experience.
- There is little or no mobility among the various assemblers and inspectors in this unit group.

Classified elsewhere

- *Aircraft Assemblers and Aircraft Assembly Inspectors* (9481)
- *Motor Vehicle Assemblers, Inspectors and Testers* (9482)
- Industrial machinery, heavy equipment and aircraft engine assemblers (in 7316 *Machine Fitters*)
- Supervisors of mechanical assemblers and inspectors (in 9226 *Supervisors, Other Mechanical and Metal Products Manufacturing*)

9487 Machine Operators and Inspectors, Electrical Apparatus Manufacturing

Machine operators in this unit group operate machinery or equipment to fabricate complete products or parts for use in the assembly of electrical appliances and equipment, and electrical apparati, such as batteries, fuses and plugs. Inspectors in this unit group inspect and test completed parts and production items. Workers in this unit group are employed by electrical appliance and electrical equipment manufacturing companies.

Examples of titles classified in this unit group

Assembly Machine Setter – Electrical Equipment Manufacturing
Battery Repairer, Production Line
Dry Charge Machine Operator
Epoxy Coating Machine Operator
Inspector, Electrical Dry Battery
Inspector, Electrical Light Bulbs
Machine Operator, Electrical Appliance Manufacturing
Machine Set-Up Operator, Electrical Equipment Manufacturing

Main duties

Machine operators in this unit group perform some or all of the following duties:

- Operate machinery to assemble, test or package dry cell batteries
- Position lead acid storage batteries on assembly line and insert battery contents into casing
- Operate machinery, such as pasting and stacking machines, to fabricate plates for lead acid storage batteries
- Load machinery with glass tubes, bulbs and other parts used to produce incandescent, fluorescent, and other types of light bulbs and tubes, and remove and pack finished product
- Operate or feed machinery and equipment to produce electrical wiring devices such as fuses, plugs, caps, sockets, connectors and switches
- Operate equipment to apply protective coatings to items such as freezer cabinets, small electric motors or transformer assemblies
- Perform minor repairs to items rejected from production line
- Set up and adjust production machinery and equipment for operation.

Inspectors and testers in this unit group perform some or all of the following duties:

- Check in-process and completed production items for visual or mechanical defects or operate testing equipment to maintain quality of products
- Identify and mark acceptable and defective assemblies and return faulty assemblies to production for repair
- Collect, record and summarize inspection result.

Employment requirements

- Some secondary school education is usually required.
- On-the-job training is provided.
- Inspectors may require experience as an assembler in the same company.

Additional information

- With experience machine operators may progress to inspecting and testing positions.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing* (9484)
- *Supervisors, Electrical Products Manufacturing* (9223)

9491 Boat Assemblers and Inspectors

Boat assemblers assemble wooden, fibreglass and metal boats, such as sailboats, motorboats, canoes and cabin cruisers. Boat inspectors check assembled boats to ensure proper product quality. They are employed by boat and marine craft manufacturing companies.

Examples of titles classified in this unit group

Aluminium Boat Assembler
Boat Assembler
Boat Inspector
Canoe Assembler
Fibreglass Boat Assembler
Motorboat Assembler
Sailboat Assembler

Main duties

Boat assemblers perform some or all of the following duties:

- Cut, shape and join timber pieces or assemble pre-cut timber pieces to make a wooden boat using hand and power tools
- Assemble prefabricated parts and sections of fibreglass, metal or other material to form complete boat
- Caulk decks and hulls using caulking gun
- Install trims, rudders, seats, engine mounts and other accessories using hand tools
- May repair boats.

Boat inspectors

- Inspect assembled boats for defects and conformance to quality standards
- Mark defects to be repaired
- Make minor adjustments and repairs
- Record information on products inspected.

Employment requirements

- Some secondary school education may be required.
- On-the-job training is provided.
- Experience as a helper or labourer in the same company may be required for boat assemblers.
- Experience as a boat assembler may be required for boat inspectors.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Builders of customized wooden boats (in 7271 *Carpenters*)
- Canoe craftspersons (in 5244 *Artisans and Craftspersons*)
- Helpers and labourers in boat manufacturing (in 9619 *Other Labourers in Processing, Manufacturing and Utilities*)
- Supervisors of boat assemblers and inspectors (in 9227 *Supervisors, Other Products Manufacturing and Assembly*)
- Workers who fabricate, assemble and fit steel and other metal components to build ships (in 7263 *Structural Metal and Platework Fabricators and Fitters*)

9492 Furniture and Fixture Assemblers and Inspectors

This unit group includes workers who assemble parts to form subassemblies or complete articles of furniture and fixtures. Inspectors in this unit group inspect furniture and fixture subassemblies and finished products to ensure product quality. They are employed by furniture manufacturing companies.

Examples of titles classified in this unit group

Assembly Inspector – Furniture Manufacturing
Chair Assembler
Desk Assembler
Fixture Assembler
Furniture Assembler
Furniture Inspector
Metal Furniture Assembler
Table Assembler
Wood Furniture Assembler

Main duties

Assemblers in this unit group perform some or all of the following duties:

- Prepare, sand and trim wooden furniture and fixture parts using hand and power tools
- Assemble wooden or metal furniture and fixture parts to form subassemblies and complete articles using hand and power tools
- Assemble a combination of parts made of wood, metal, plastic, cane or other materials to form subassemblies or complete furniture articles
- Reinforce assembled furniture and fixtures with dowels or other supports
- Install hardware such as hinges or clasps on furniture and fixtures.

Inspectors in this unit group perform some or all of the following duties:

- Inspect furniture and fixture subassemblies and finished products for conformance to quality standards
- Mark defective parts or products for repair
- Make minor adjustments and repairs
- Record information on products inspected.

Employment requirements

- Some secondary school education may be required.
- On-the-job training is provided.
- Experience as a labourer in the same company may be required.

Additional information

- Mobility is possible between jobs in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Furniture Finishers and Refinishers* (9494)
- *Other Wood Products Assemblers and Inspectors* (9493)
- *Woodworking Machine Operators* (9513)
- Supervisors of workers in this unit group (in 9224 *Supervisors, Furniture and Fixtures Manufacturing*)

9493 Other Wood Products Assemblers and Inspectors

Assemblers in this unit group assemble a variety of wood products and millwork, such as window sashes and doors. Inspectors in this unit group inspect wood products to ensure product quality. They are employed by establishments engaged in manufacturing a variety of wood and millwork products.

Examples of titles classified in this unit group

Bench Assembler, Wood Products
Crate Builder, Wood
Manufactured Housing Production Worker
Millwork Assembler
Pallet Maker, Wood
Prefabricated Housing Assembler
Sash and Door Inspector
Wood Products Assembler
Wood Products Assembling Inspector
Wooden Box Assembler
Wooden Door Maker

Main duties

Assemblers in this unit group perform some or all of the following duties:

- Trim and sand joints, moulding or other wooden parts to be assembled using hand and power tools
- Assemble wood products such as window sashes, doors, boxes, pallets, ladders and barrels using glue, staples, screws, bolts or other fasteners
- Assemble door panels, trusses, modular components and other parts on assembly line to make prefabricated housing using jigs, overhead cranes and hand and power tools
- Reinforce assembled products with dowelling or other supports, and install hardware such as knobs and hinges.

Inspectors in this unit group perform some or all of the following duties:

- Inspect wood products for conformance to quality standards
- Mark defective parts or products for repair
- Make minor adjustments and repairs
- Record information on products inspected.

Employment requirements

- Experience as a labourer in the same company may be required.
- Inspectors may require related assembly experience.
- On-the-job training is provided.

Classified elsewhere

- *Cabinetmakers* (7272)
- *Carpenters* (7271)
- *Furniture and Fixture Assemblers and Inspectors* (9492)
- *Supervisors, Other Products Manufacturing and Assembly* (9227)
- *Woodworking Machine Operators* (9513)
- Labourers in wood products manufacturing (in 9619 *Other Labourers in Processing Manufacturing and Utilities*)

9494 Furniture Finishers and Refinishers

Furniture finishers finish new wood or metal furniture to specified colour and finish. They are employed in furniture manufacturing plants, retail furniture stores or refinishing and repair shops. Furniture refinishers refinish repaired, used or old furniture. They are employed in furniture refinishing shops or they may be self-employed.

Examples of titles classified in this unit group

Finishing Machine Operator
Furniture Finisher
Furniture Polisher
Furniture Refinisher
Furniture Stainer
Furniture Stripper
Touch-up Person – Furniture Finishing
Trimmer – Furniture Finishing
Wash-off Operator – Furniture Finishing
Wood Finisher

Main duties

Furniture finishers perform some or all of the following duties:

- Set up and operate finishing machines or finish furniture by hand
- Stain or finish wood to specified colour with stains, paints or other materials using brush or spray gun
- Apply toners, highlights, glazes or shaders to obtain desired finish
- Apply lacquer or other sealers
- Decorate wood surfaces or mark surfaces to create antique or other effects using hand and power tools
- Clean and polish furniture
- Sand metal furniture to prepare for finish and spray with paint or other materials.

Refinishers perform some or all of the following duties:

- Strip old finish from wood surface using steel wool, sandpaper and solvents
- Smooth gouges with wood filler and sand wood
- Match colours to obtain original finish and apply appropriate finish to stripped wood
- Polish and wax refinished surfaces
- Sand or grind metal surfaces to prepare for coating, and paint metal surfaces using electrostatic method, spray gun or other painting equipment
- Make minor repairs to furniture
- May perform duties of furniture finisher.

Employment requirements

- Some secondary school education is required.
- College, high school or industry courses in furniture finishing or refinishing may be required.
- On-the-job training is provided.

Classified elsewhere

- *Painters and Decorators* (7294)
- *Upholsterers* (7341)

9495 Plastic Products Assemblers, Finishers and Inspectors

This unit group includes workers who assemble, finish and inspect plastic parts and finished products. They are employed by plastic products manufacturing companies and plastic parts divisions of aircraft or other manufacturing companies.

Example of titles classified in this unit group

Fibreglass Laminator
Plastic Bottle Trimmer
Plastic Parts Assembler
Plastic Products Inspector and Tester
Plastic Tank Assembler
Plastics Assembler
Plastics Fabricator
Plastics Grinder
Plastics Inspector
Plastics Trimmer
Skylight Assembler

Main duties

Plastic products assemblers and finishers perform some or all of the following duties:

- Operate machines or equipment, or use hand tools to cut, shape, splice and fit plastic materials to form parts and assemblies
- Assemble composite materials on patterns to form parts and assemblies using bonding agents
- Operate spray-gun unit to apply resin mixtures to metal or wooden mould to form plastic products
- Load and operate autoclave oven to cure and bond plastic parts and subassemblies
- Operate finishing equipment to trim, grind or buff plastic products into final form.

Plastics products inspectors perform some or all of the following duties:

- Inspect manufactured plastic products for defects and conformance to specifications and quality standards, visually or using instruments
- Affix seals or tags to approved plastic products and mark and re-route defective products for repair or recycle
- Prepare reports on products inspected
- Make minor adjustments and repairs to products.

Employment requirements

- Some secondary school education is usually required.
- Experience as a labourer in the same company may be required for assemblers, finishers and inspectors.
- On-the-job training is provided.

Additional information

- Progression to supervisory positions is possible with experience.
- Mobility among the various workers in this unit group is possible.

Classified elsewhere

- *Labourers in Rubber and Plastic Products Manufacturing* (9615)
- *Plastics Processing Machine Operators* (9422)
- *Rubber Processing Machine Operators and Related Workers* (9423)
- *Supervisors, Plastic and Rubber Products Manufacturing* (9214)

9496 Painters and Coaters, Manufacturing

Painters and Coaters, Manufacturing tend and operate machines or use brushes and spray equipment to apply paint, enamel, lacquer or other non-metallic protective and decorative coatings to surfaces of various production items. They are employed by manufacturing companies.

Examples of titles classified in this unit group

Aircraft Painter
Assembly Painter
Automobile Painter
Coating Machine Operator
Dip Tank Attendant
Industrial Product Painter
Manufacturing Painter
Paint Systems Operator
Paint Machine Operator
Production Painter
Spray Paint Operator
Spray Painter

Main duties

Painters and coaters in this unit group perform some of all of the following duties:

- Select appropriate paint or mix paints using automated paint mixing equipment according to a pre-determined formula
- Tend or operate equipment to clean, wash or otherwise prepare items for application of paint, lacquer or other protective or decorative coatings
- Tend or operate automated spray paint, dip or flow coating equipment or other mechanized painting or product coating application equipment
- Operate hand-held spray guns to spray paint or coat stationary items or items on moving conveyor system with protective or decorative coatings
- Paint small items and apply touch-ups using paint brushes
- Clean and maintain painting and coating equipment
- May prepare and apply stencils, decals or other decorative items on finished products.

Employment requirements

- Some secondary school education is usually required.
- Several months of on-the-job training are usually provided.
- Some industrial painters, such as aircraft painters, require specialized training or college courses.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Furniture Finishers and Refinishers* (9494)
- *Plating, Metal Spraying and Related Operators* (9497)
- Autobody repair painters or repainters (in 7322 *Motor Vehicle Body Repairers*)
- Construction painters (in 7294 *Painters and Decorators*)
- Supervisors of manufacturing painters and coaters (in 9214 *Supervisors, Plastic and Rubber Products Manufacturing* and in 922 *Supervisors, Assembly and Fabrication*)

9497 Plating, Metal Spraying and Related Operators

This unit group includes workers who operate machines or equipment to deposit metallized substances on metal or other articles to provide decorative, protective or restorative coatings. They are employed by metal products manufacturing companies and by customized metal plating and coating shops.

Examples of titles classified in this unit group

Anodizer
Electroplater Operator
Galvanizer
Metal Coater Operator
Metal Dipper
Metal Electroplater
Metal Spray Operator
Sherardizer

Main duties

Operators in this unit group perform some or all of the following duties:

- Prepare and mix metallizing solutions according to formulas or specifications
- Operate and control electroplating equipment to coat metal and other objects
- Operate hot-dip metal plating equipment to coat metal and other objects
- Tend automatic metal coating machine which conveys objects through series of cleaning, rinsing and plating solutions
- Operate spray equipment to build up worn or damaged parts or to bond protective or decorative coatings on metal objects
- Check proper thickness of plating using micrometers, callipers or other devices.

Employment requirements

- Some secondary school education is usually required.
- Experience in operating production machinery or equipment may be required.
- Three to six months of on-the-job training are usually required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- Production painters (in 9496 *Painters and Coaters, Manufacturing*)
- Supervisors of operators in this unit group (in 9226 *Supervisors, Other Mechanical and Metal Products Manufacturing*)

9498 Other Assemblers and Inspectors

This unit group includes assemblers and inspectors, not elsewhere classified, who assemble and inspect a variety of products, such as jewellery, silverware, clocks and watches, musical instruments, sporting goods, toys, and other miscellaneous products. They are employed by a wide variety of manufacturing companies.

Examples of titles classified in this unit group

Antenna Assembler
Bicycle Assembler
Camera Assembly Inspector
Eyeglass Frame Assembler
Golf Club Assembler
Jewellery Inspector
Lamp Shade Assembler
Piano Assembly Inspector
Skate Maker
Toy Inspector
Watch Assembler
Venetian Blind Assembler

Main duties

Assemblers in this unit group perform some or all of the following duties:

- Cut, shape and fit materials to form parts and components
- Screw, clip, glue, bond, weld or otherwise assemble parts and components to form final products
- Sand, trim, grind or clean products into final form using hand tools.

Inspectors in this unit group perform some or all of the following duties:

- Check manufactured items for defects and for conformance to specifications, visually or using sample models and instruments
- Affix seals or tags to approved items and return defective products for repair or recycle
- Complete reports on product inspection.

Employment requirements

- Some secondary school education is usually required.
- Experience as a manufacturing labourer in the same company may be required.
- On-the-job training is provided.

Additional information

- There is little or no mobility among the various assemblers and inspectors in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Other Products Machine Operators* (9517)
- *Supervisors, Other Products Manufacturing and Assembly* (9227)

9511 Machining Tool Operators

Machining Tool Operators set up and operate or tend metal-cutting machines designed for repetitive machining work. They are employed by metal products and other manufacturing companies and in machine shops. This unit group also includes workers who etch or chemically mill metal pieces.

Examples of titles classified in this unit group

Aircraft Parts Etcher
Boring Mill Operator
Lathe Machining Operator
Machining Tool Operator
Metal Grinder Operator, Production
Milling Machine Set-up Operator
Numerical Control (NC) Machine Tool Operator
Production Gear Cutter
Radial Drill Operator

Main duties

Machining Tool Operators perform some or all of the following duties:

- Study job orders or interpret blueprints to determine machining operations to be performed
- Operate and set up machines to perform repetitive machining operations, such as turning, milling, drilling, boring, planing, honing, broaching, grinding or other machining operations
- Verify dimensions of parts machined using precision measuring instruments
- Prepare etching solution and immerse metal parts or workpiece in etching solution to remove unwanted portions.

Employment requirements

- Some secondary school education is required.
- College or other courses in machining may be required.
- Several months of on-the-job training are provided.
- Senior positions in this unit group, such as set-up operator, require experience as a machine operator.

Additional information

- Experienced machining tool operators may become machinists through apprenticeship training.

Classified elsewhere

- *Machinists and Machining and Tooling Inspectors* (7231)
- *Tool and Die Makers* (7232)
- Supervisors of machining tool operators (in 9226 *Other Mechanical and Metal Products Manufacturing*)

9512 Forging Machine Operators

Forging Machine Operators operate forging machines to form and shape metal into various shapes and sizes and impart desired strength, hardness or other characteristics. They are employed primarily in the fabricated metal products, machinery, and transportation equipment industries.

Examples of titles classified in this unit group

Bending Machine Operator
Cold Drawn Operator
Cold Press Operator
Forging Press Operator
Hot Press Operator
Manipulator Operator
Trip Hammer Operator
Upsetter Operator

Main duties

Forging Machine Operators perform some or all of the following duties:

- Operate gas or oil fired furnaces to heat metal to proper temperature prior to forging
- Place metal pieces in furnace using hand tongs or overhead cranes and remove from furnace when colour of metal indicates proper forging temperature, or load and unload furnace with automatic conveyor
- Position heated or cold metal pieces, on die of press or other forging machinery
- Operate presses or other forging machines to perform hot or cold forging by flattening, straightening, twisting, forming, drawing, upsetting, splitting, cutting, punching, piercing, bending, coining, or other operations to shape or form metal
- Position and adjust dies on anvil of forging machinery using overhead cranes or other hoisting devices and hand tools.

Employment requirements

- Some secondary school education is usually required.
- On-the-job training is provided.

Additional information

- Progression to blacksmith, die setting, or supervisory positions is possible with experience.

Classified elsewhere

- *Blacksmiths and Die Setters* (7266)
- Supervisors of forging machine operators (in 9226 *Supervisors, Other Mechanical and Metal Products Manufacturing*)

9513 Woodworking Machine Operators

Woodworking Machine Operators set up, program and operate one or more woodworking machines to fabricate or repair wooden parts for furniture, fixtures or other wood products. They are employed in furniture, fixture and other wood products manufacturing establishments.

Examples of titles classified in this unit group

Band Saw Operator – Woodworking
Boring Machine Operator – Woodworking
Drill Operator – Woodworking
Drum Sander – Woodworking
Edge Bander Operator – Woodworking
Glue Machine Operator – Woodworking
Lathe Operator – Woodworking
Planer Operator – Woodworking
Rough Mill Operator – Woodworking
Shaper – Woodworking
Woodworking Machine Operator

Main duties

Woodworking Machine Operators perform some or all of the following duties:

- Set up, program and operate one or more computerized or manual woodworking machines such as saws, routers, planers, drills and sanders to fabricate or repair wooden parts for furniture, fixtures and other wood products
- Operate gluing machines to glue pieces of wood together or press and affix wood veneer to wood surfaces
- Operate pre-set special-purpose woodworking machines to fabricate wood products such as coat hangers, mop handles, clothes pins and other products
- Read and interpret specifications or follow verbal instructions
- May clean and lubricate equipment, and replace parts as necessary.

Employment requirements

- Some secondary school education is usually required.
- On-the-job training is usually provided.
- Experience as a labourer in the same company may be required.

Additional information

- Mobility is common among jobs in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Cabinetmakers* (7272)
- *Carpenters* (7271)
- Supervisors of woodworking machine operators (in 9224 *Supervisors, Furniture and Fixtures Manufacturing*)

9514 Metalworking Machine Operators

Light Metalworking Machine Operators operate metalworking machines which shape and form sheet or other light metal into parts or products. They are employed by sheet metal products manufacturing companies, sheet metal shops and other light metal products manufacturing establishments. Heavy Metalworking Machine Operators operate metalworking machines which shape and form steel or other heavy metal into parts or products. They are employed by structural steel fabrication, boiler and platework manufacturing companies, heavy machinery manufacturing companies and in the shipbuilding industry.

Examples of titles classified in this unit group

Brake Press Operator
Disk Flange Operator
Metalworking Machine Operator
Power Press Operator
Punch Press Operator
Rolls Operator
Saw Operator
Shear Operator
Vertical Press Operator

Main duties

Metalworking Machine Operators perform some or all of the following duties:

- Read specifications or follow verbal instructions
- Set up and operate one or more light or heavy metalworking machines such as shears, power presses, saws, plate rolls, drills, brakes, slitters, punch press and CNC (computer, numerical control) equipment to cut bend, roll, ream, punch and drill, or otherwise shape and form metal stock into parts or products
- Operate machines or equipment which weld, solder, bolt, screw or rivet metal parts together
- Check products for correct shapes, dimensions and other specifications
- May select and transport material to work area manually or using crane or hoist
- May clean or lubricate equipment and replace parts as required.

Employment requirements

- Some secondary school education is required.
- On-the-job training is usually provided.
- Previous experience as a labourer or helper in the same company may be required.

Additional information

- There is little or no mobility between operators of light and heavy metalworking machines.
- Progression to structural metal fabricator or supervisory positions is possible with experience.

Classified elsewhere

- *Sheet Metal Workers* (7261)
- *Structural Metal and Platework Fabricators and Fitters* (7263)
- Supervisors of metalworking machine operators (in 9226 *Supervisors, Other Mechanical and Metal Products Manufacturing*)

9515 Welding, Brazing and Soldering Machine Operators

Welding machine operators operate a variety of previously set up welding machines. Brazing and soldering machine operators operate previously set up brazing or soldering machines. They are employed by manufacturers of heavy machinery, transportation equipment, aircraft and other metal products.

Examples of titles classified in this unit group

Brazer Operator
Brazing Machine Operator
Soldering Machine Operator
Spot Welder
Production Welder

Main duties

Welding machine operators and brazing and soldering machine operators perform some or all of the following duties:

- Welding machine operators operate previously set up welding machines such as spot, butt and seam resistance or gas and arc welding machines to fabricate or repair metal parts.
- Brazing and soldering machine operators operate previously set up brazing or soldering machines to bond metal parts or to fill holes, indentations and seams of metal articles with solder.

Employment requirements

- Some secondary school education may be required.
- Several months of on-the-job training are usually provided.
- Experience as a machine operator helper may be required.

Additional information

- In data provided by Statistics Canada, unit groups 7265 and 9515 are combined to form 9510 *Welders and Soldering Machine Operators.*

Classified elsewhere

- *Welders* (7265)

9516 Other Metal Products Machine Operators

This unit group includes metal products machine operators, not elsewhere classified, who operate one or more automatic or multi-purpose machines to produce a variety of metal parts and products, such as wires, nails, bolts and chains. They are employed by a wide variety of metal products manufacturing companies.

Examples of titles classified in this unit group

Bolt Machine Operator
Bullet Maker
Can Forming Machine Operator
Chain Making Machine Operator
Metal Cable Maker Operator
Nail Making Machine Tender
Spring Machine Operator
Wire Screen Maker
Wire Weaver

Main duties

Machine operators in this unit group perform some or all of the following duties:

- Operate or tend automatic or multi-purpose machines including wire looms to produce metal parts and metal products such as wire screening, fencing, tinware, metal baskets, racks, hooks, metal tubing and similar articles
- Fit and assemble components using hand and power tools
- Clean, polish, file or otherwise finish products
- Check products for quality and other specifications
- May clean and lubricate machinery.

Employment requirements

- Some secondary school education may be required.
- On-the-job training is provided.
- Experience as a labourer in the same company may be required.

Additional information

- There is some mobility among machine operators in this unit group.
- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Forging Machine Operators* (9512)
- *Metalworking Machine Operators* (9514)
- *Machining Tool Operators* (9511)
- Supervisors of machine operators in this unit group (in 9226 *Supervisors, Other Mechanical and Metal Product Manufacturing*)

9517 Other Products Machine Operators

This unit group includes all machine operators, not elsewhere classified, who operate machines to cut, press, stamp, mould, treat, finish or otherwise fabricate components or products, such as jewellery, buttons, pencils, crayons, non-prescription lenses, brushes, notions and other miscellaneous products. They are employed by a wide variety of manufacturing companies.

Examples of titles classified in this unit group

Brush Making Machine Operator
Button Machine Operator
Crayon Making Machine Tender
Jewellery Annealer
Prism Maker Operator
Skate Press Operator
Sports Ball Moulder
Stuffing Machine Tender
Tennis Ball Maker Operator

Main duties

Machine Operators in this unit group perform some or all of the following duties:

- Operate machines which cut, press, stamp, mould, treat, finish or otherwise fabricate components or products
- Load supplies into hoppers of dispensing units or manually align, feed or otherwise place materials into machines
- Monitor machines for proper operation watching for jammed materials, defective units or other irregularities
- Clean work stations, removing scraps, dust, shavings or other by-products from machinery and surrounding areas
- May make routine changes of dies, nozzles or other machinery attachments as required.

Employment requirements

- Some secondary school may be required.
- On-the-job training is provided.
- Experience as a labourer in the same company may be required.

Additional information

- Progression to supervisory positions is possible with experience.

Classified elsewhere

- *Other Assemblers and Inspectors* (9498)
- Supervisors of machine operators in this unit group (in 9227 *Supervisors, Other Products Manufacturing and Assembly*)

9611 Labourers in Mineral and Metal Processing

Labourers in this unit group perform material handling, clean-up, packaging and other elemental activities related to mineral ore and metal processing. They are employed in mineral ore and metal processing plants such as copper, lead and zinc refineries, uranium processing plants, steel mills, aluminum plants, precious metal refineries, cement processing plants, clay, glass and stone processing plants and foundries.

Examples of titles classified in this unit group

Asbestos Worker
Billet Pusher
Brick and Tile Kiln Cleaner
Casting Helper
Foundry Labourer
Furnace Helper
Glass Packer
Kiln Labourer
Metal Pourer Helper
Rolling Mill Worker
Salt Screening Labourer
Tailings Labourer

Main duties

Labourers in Mineral and Metal Processing perform some or all of the following duties:

- Transport raw materials, finished products and scrap materials throughout plant manually or using forklift or other powered equipment
- Feed conveyors, crushers and other equipment; open valves and start pumps; skim dross from furnaces; sort, stack, bundle and stamp materials; and perform other activities to assist process and machine operators in mineral ore and metal processing
- Clean work areas and equipment.

Employment requirements

- Some secondary school education is usually required.

Additional information

- Progression to machine and process operator positions is possible with experience.

Classified elsewhere

- *Labourers in Metal Fabrication* (9612)
- *Machine Operators, Mineral and Metal Processing* (9411)

9612 Labourers in Metal Fabrication

Labourers in this unit group remove excess metal and unwanted materials from metal parts, castings and other metal products and perform other labouring activities. They are employed in structural steel, boiler and platework fabrication plants, heavy machinery manufacturing plants, sheet metal fabrication shops, shipbuilding and other metal products manufacturing companies.

Examples of titles classified in this unit group

Chipper-Grinder
Forge Helper
Grinder-Deburrer
Labourer, Metal Fabrication
Metal Cleaner
Metalworking Machine Helper
Plater Helper
Shipfitter Helper
Shotblast Operator
Wheelabrator Operator
Wire Drawer Helper

Main duties

Labourers in this unit group perform some or all of the following duties:

- Operate metal cleaning equipment such as wheelabrators, deburrers and shotblasters to remove excess welds, rust, scale and other material from surfaces of metal parts, castings and other metal products
- Immerse metal products in cleaning solutions
- Assist structural steel and platework fitters, sheet metal workers, metal machine operators or other metal workers
- Transport raw materials and finished metal products manually or using hoists or other devices
- Sort metal sheets and parts, scrap metal and other materials
- Clean work areas and equipment
- Load and unload vehicles using hand truck or dolly
- May grind or chip excess metal from metal products using hand tools.

Employment requirements

- Some secondary school education may be required.

Additional information

- There is some mobility between occupations in this unit group.
- Progression to metal-working machine operator positions is possible with experience.

Classified elsewhere

- *Labourers in Mineral and Metal Processing* (9611)
- Metal machine operators (in several unit groups in 951 *Machining, Metalworking, Woodworking and Related Machine Operators*)

9613 Labourers in Chemical Products Processing and Utilities

Labourers in this unit group carry out a variety of material handling, cleaning and routine general labouring activities. They are employed by petroleum and natural gas processing, pipeline and petrochemical, chemical and pharmaceutical companies, and by electrical, water and waste treatment utilities.

Examples of titles classified in this unit group

Cleaner, Filter – Chemical Processing
Cleaner, Still – Chemical Processing
Coating Machine Feeder
Helper – Chemical Processing
Labourer – Gas Utility
Loader – Chemical Processing
Retort Unloader
Water Intake Tender
Waterworks Labourer

Main duties

Labourers in this unit group perform some or all of the following duties:

- Feed and unload production machinery and equipment
- Clean chemical processing machines and equipment and production areas
- Move, sort and pile materials and products manually and using powered equipment
- Assist other workers to operate, repair and maintain process equipment, gas distribution, water filtration and waste water plant equipment
- Perform general duties such as basic construction, painting and other manual tasks.

Employment requirements

- Completion of secondary school may be required.

Additional information

- Considerable mobility is possible among jobs in this occupational group.
- Progression to operator positions in the chemical or utility industry is possible with experience and appropriate entry qualifications.

Classified elsewhere

- *Chemical Plant Machine Operators* (9421)
- *Petroleum,, Gas and Chemical Process Operators* (9232)
- *Power Systems and Power Station Operators* (7352)
- *Water and Waste Plant Operators* (9424)

9614 Labourers in Wood, Pulp and Paper Processing

Labourers in this unit group carry out a variety of general labouring and routine wood processing activities and assist pulp mill and papermaking machine operators. They are employed by pulp and paper, and paper converting companies, sawmills, planing mills, wood treatment plants, waferboard plants and other wood processing companies.

Examples of titles classified in this unit group

Beater Operator Helper – Pulp and Paper
Chip Bin Attendant – Wood Processing
Conveyor Cleaner – Pulp and Paper
Green Chainman/woman – Wood Processing
Grinder Feeder – Pulp and Paper
Labourer – Pulp and Paper
Labourer – Wood Processing
Lumber Straightener – Wood Processing
Plywood Drier Feeder
Sheeter Helper, Pulp and Paper
Utility Man/Woman – Pulp and Paper

Main duties

Labourers in this unit group perform some or all of the following duties:

- Feed logs onto conveyor and into hopper of grinding machine and align logs manually, using crowbar, picaroon or other tools and equipment
- Load wood chips, pulpwood, sulphur and other processing materials onto conveyors or processing tanks, remove waste paper and pulp from pulp and papermaking machines and transport waste paper and pulp to plant processing machines and equipment using fork lift or other powered equipment
- Sort, pile and transport lumber, veneer sheets, panelboards and similar wood products during various stages of wood processing, manually or with powered equipment
- Remove scrap lumber and wood chips for reprocessing using fork lift or other powered equipment
- Feed conveyors, saws, drying machines and other equipment to process lumber, shingles, veneer, plywood, and similar wood products
- Clean wood processing machines and equipment and work areas using shovels, hoses and other tools
- Assist other wood processing workers to operate various machines and equipment and carry out other wood processing activities.

Employment requirements

- Completion of secondary school is required by the pulp and paper industry and by other large employers.
- There is considerable mobility among jobs within individual establishments.
- Progression to machine or plant operating positions is possible with experience.

Classified elsewhere

- *Machine Operators and Related Workers in Pulp and Paper Production and Wood Processing* (943)

9615 Labourers in Rubber and Plastic Products Manufacturing

Labourers in this unit group assist machine operators, transport materials and perform similar tasks. They are employed by rubber and plastic products manufacturing companies.

Example of titles classified in this unit group

Belt Builder Helper
Labourer, Plastic Manufacturing
Labourer, Rubber Manufacturing
Machine-Offbearer, Rubber Manufacturing
Machine Operator Helper
Mould Cleaner, Rubber Manufacturing
Moulded Products Stripper, Rubber and Plastic Manufacturing
Spreader Operator Helper, Plastic Manufacturing
Roll Changer, Rubber Manufacturing

Main duties

Labourers in this unit group perform some or all of the following duties:

- Assist machine operators or assemblers in performing their duties
- Assist in setting up and dismantling machinery and equipment
- Clean and lubricate machinery and equipment
- Transport materials and tools to and from work areas using hand trucks or other conveyance
- Prepare raw materials for mixing process
- Monitor machines to watch for jammed materials or defective products.

Employment requirements

- Some secondary school education may be required.

Additional information

- Progression to machine operator or assembler positions in rubber and plastic products manufacturing is possible with experience.

Classified elsewhere

- *Plastic Products Assemblers, Finishers and Inspectors* (9495)
- *Plastics Processing Machine Operators* (9422)
- *Rubber Processing Machine Operators and Related Workers* (9423)
- *Supervisors, Plastic and Rubber Products Manufacturing* (9214)

9616 Labourers in Textile Processing

Labourers in Textile Processing perform a variety of manual duties to assist in processing fibres into yarn or thread, or to assist in weaving, knitting, bleaching, dyeing or finishing textile fabrics or other textile products. They are employed by textile companies.

Examples of titles classified in this unit group

Doffer
Dyeing and Finishing Machine Loader
Helper – Textiles
Textile Machine Cleaner
Waste Machine Feeder
Yarn Handler

Main duties

Labourers in Textile Processing perform some or all of the following duties:

- Load and off-load machines
- Clean textile machines and work areas
- Push carts, trucks, or cans of fibres from one work area to another.

Employment requirements

- Some secondary school education may be required.

Additional information

- Progression to machine operator positions is possible with experience.

Classified elsewhere

- *Machine Operators and Related Workers in Textile Processing* (944)

9617 Labourers in Food, Beverage and Tobacco Processing

Labourers in this unit group perform material handling, clean-up, packaging and other elemental activities related to food, beverage and tobacco processing. They are employed in fruit and vegetable processing plants, dairies, flour mills, bakeries, sugar refineries, meat plants, breweries and other food, beverage and tobacco processing plants.

Examples of titles classified in this unit group

Bottle Washer
Brewery Worker
Cigarette Packer
Dairy Helper
Food Processing Labourer
Meat Packager
Potato Chip Sorter
Production Helper

Main duties

Labourers in Food, Beverage and Tobacco Processing perform some or all of the following duties:

- Transport raw materials, finished products and packaging materials throughout plant and warehouse manually or with powered equipment
- Measure and dump ingredients into hoppers of mixing and grinding machines or mobile tank trucks
- Feed flattened boxes into forming machines to construct containers
- Remove filled containers from conveyors and manually pack goods into bags, boxes or other containers
- Clean work areas and equipment
- Feed and unload tobacco processing machines
- Check products and packaging for basic quality defects
- Assist process control and machine operators in performing their duties.

Employment requirements

- Some secondary school education may be required.

Additional information

- There is some mobility among occupations in this group.
- Labourers in food, beverage and tobacco processing may progress to machine or process operating positions with experience.

Classified elsewhere

- *Labourers in Fish Processing* (9618)
- *Process Control and Machine Operators, Food and Beverage Processing* (9461)
- *Tobacco Processing Machine Operators* (9464)

9618 Labourers in Fish Processing

Labourers in this unit group perform clean-up, packaging, material handling and other elemental activities related to fish processing. They are employed in fish processing and packaging plants.

Examples of titles classified in this unit group

Cannery Labourer
Fish Briner
Fish Plant Labourer
Fish Salter
Fish Weigher
Shellfish Labourer
Shellfish Packer

Main duties

Labourers in Fish Processing perform some or all of the following duties:

- Unload fish and shellfish from fishing vessels and transport them by hand or forklift truck to work area in fish processing plant
- Immerse fresh fish fillets in brine solution to condition them for wrapping or freezing
- Weigh fish or shellfish, record weight and pack fish in ice
- Clean work areas and equipment
- Transport supplies and packaging materials throughout plant and storage area manually or with powered equipment
- Measure and dump ingredients into hoppers of mixing and grinding machines.

Employment requirements

- Some secondary school education may be required.

Additional information

- Progression to other occupations in the fish processing industry is possible with experience.

Classified elsewhere

- *Fish Plant Workers* (9463)
- Supervisors of labourers in fish processing (in 9213 *Supervisors, Food, Beverage and Tobacco Processing*)

9619 Other Labourers in Processing, Manufacturing and Utilities

This unit group includes labourers, not elsewhere classified, who perform material handling, clean-up, packaging and other elemental activities in processing, manufacturing and utilities. They are employed by companies that manufacture products such as clothing, footwear, furniture and electrical and electronic products and by printing and packaging companies.

Examples of titles classified in this unit group

Bindery Helper
Box Packer
Carton Marker
Chair Sander
Clothing Plant Labourer
Electrical Products Labourer
Film Cutter – Film Processing
Furniture Packer
Garment Folder
Labourer, Shoe Manufacturing
Lens Blocker
Packager, Machine
Seed Packager
Upholsterer Helper

Main duties

Labourers in this unit group perform some or all of the following duties:

- Transport raw materials, finished products and equipment throughout plant manually or using powered equipment
- Check and weigh materials and products
- Sort, pack, crate and package materials and products
- Assist machine operators, assemblers and other workers
- Clean work areas and equipment
- Perform other labouring and elemental activities.

Employment requirements

- Some secondary school education may be required.

Additional information

- There is some mobility among occupations in this unit group.
- Progression to machine operating positions is possible with experience.

Classified elsewhere

- Supervisors of labourers in this unit group (in 9227 *Supervisors, Other Products Manufacturing and Assembly*)

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NATIONAL OCCUPATIONAL CLASSIFICATION MATRIX

The National Occupational Classification (NOC) matrix provides an overview of the classification at the minor group level. It also illustrates how the NOC is accessible on the basis of skill level, skill type, or on a combination of these two criteria. The four skill level categories are listed on the left side of the matrix, while nine skill type categories are listed across the top. The tenth skill type category (0 Management Occupations) is organized across the top of the matrix. In most cases, each matrix cell consists of a major group.

	1 BUSINESS, FINANCE AND ADMINISTRATION OCCUPATIONS	2 NATURAL AND APPLIED SCIENCES AND RELATED OCCUPATIONS	3 HEALTH OCCUPATIONS	4 OCCUPATIONS IN SOCIAL SCIENCE, EDUCATION, GOVERNMENT SERVICE AND RELIGION	5 OCCUPATIONS IN ART, CULTURE, RECREATION AND SPORT	6 SALES AND SERVICE OCCUPATIONS	7 TRADES, TRANSPORT AND EQUIPMENT OPERATORS AND RELATED OCCUPATIONS	8 OCCUPATIONS UNIQUE TO PRIMARY INDUSTRY	9 OCCUPATIONS UNIQUE TO PROCESSING, MANUFACTURING AND UTILITIES
0 MANAGEMENT OCCUPATIONS					**Major Group 00** SENIOR MANAGEMENT OCCUPATIONS 001 Legislators and Senior Management				
	011 Administrative Services Managers 012 Managers in Financial and Business Services 013 Managers in Communication (Except Broadcasting)	001 Managers in Engineering, Architecture, Science and Information Systems	031 Managers in Health, Education, Social and Community Services 041 Managers in Public Administration		051 Managers in Art, Culture, Recreation and Sport	061 Sales, Marketing and Advertising Managers 062 Managers in Retail Trade 063 Managers in Food Service and Accommodation 064 Managers in Protective Service 065 Managers in Other Services	071 Managers in Construction and Transportation 072 Facility Operation and Maintenance Managers	081 Managers in Primary Production (Except Agriculture)	091 Managers in Manufacturing and Utilities
SKILL LEVEL A	**Major Group 11** PROFESSIONAL OCCUPATIONS IN BUSINESS AND FINANCE 111 Auditors, Accountants and Investment Professionals 112 Human Resources and Business Service Professionals	**Major Group 21** PROFESSIONAL OCCUPATIONS IN NATURAL AND APPLIED SCIENCES 211 Physical Science Professionals 212 Life Science Professionals 213 Civil, Mechanical, Electrical and Chemical Engineers 214 Other Engineers 215 Architects, Urban Planners and Land Surveyors 216 Mathematicians, Systems Analysts and Computer Programmers	**Major Group 31** PROFESSIONAL OCCUPATIONS IN HEALTH 311 Physicians, Dentists and Veterinarians 312 Optometrists, Chiropractors and Other Health Diagnosing and Treating Professionals 313 Pharmacists, Dietitians and Nutritionists 314 Therapy and Assessment Professionals 315 Nurse Supervisors and Registered Nurses	**Major Group 41** PROFESSIONAL OCCUPATIONS IN SOCIAL SCIENCE, EDUCATION, GOVERNMENT SERVICES AND RELIGION 411 Judges, Lawyers and Quebec Notaries 412 University Professors and Assistants 413 College and Other Vocational Instructors 414 Secondary and Elementary School Teachers and Counsellors 415 Psychologists, Social Workers, Counsellors, Clergy and Probation Officers 416 Policy and Program Officers, Researchers and Consultants	**Major Group 51** PROFESSIONAL OCCUPATIONS IN ART AND CULTURE 511 Librarians, Archivists, Conservators and Curators 512 Writing, Translating and Public Relations Professionals 513 Creative and Performing Artists				
SKILL LEVEL B	**Major Group 12** SKILLED ADMINISTRATIVE AND BUSINESS OCCUPATIONS 121 Clerical Supervisors 122 Administrative and Regulatory Occupations 123 Finance and Insurance Administrative Occupations 124 Secretaries, Recorders and Transcriptionists	**Major Group 22** TECHNICAL OCCUPATIONS RELATED TO NATURAL AND APPLIED SCIENCES 221 Technical Occupations in Physical Sciences 222 Technical Occupations in Life Sciences 223 Technical Occupations in Civil, Mechanical and Industrial Engineering 224 Technical Occupations in Electronics and Electrical Engineering 225 Technical Occupations in Architecture, Drafting, Surveying and Mapping 226 Other Technical Inspectors and Regulatory Officers 227 Transportation Officers and Controllers	**Major Group 32** TECHNICAL AND SKILLED OCCUPATIONS IN HEALTH 321 Medical Technologists and Technicians (except Dental Health) 322 Technical Occupations in Dental Health Care 323 Other Technical Occupations in Health Care (Except Dental)	**Major Group 42** PARAPROFESSIONAL OCCUPATIONS IN LAW, SOCIAL SERVICES, EDUCATION AND RELIGION 421 Paralegals, Social Services Workers and Occupations in Education and Religion, n.e.c.	**Major Group 52** TECHNICAL AND SKILLED OCCUPATIONS IN ART, CULTURE, RECREATION AND SPORT 521 Technical Occupations in Libraries, Archives, Museums and Galleries 522 Photographers, Graphic Arts Technicians and Technical Occupations in Motion Pictures, Broadcasting and the Performing Arts 523 Announcers and Other Performers 524 Creative Designers and Craftspersons 525 Athletes, Coaches, Referees and Related Occupations	**Major Group 62** SKILLED SALES AND SERVICE OCCUPATIONS 621 Sales and Service Supervisors 622 Technical Sales Specialists, Wholesale Trade 623 Insurance and Real Estate Sales Occupations and Buyers 624 Chefs and Cooks 625 Butchers and Bakers 626 Police Officers and Firefighters 627 Technical Occupations in Personal Service	**Major Group 72/73** TRADES AND SKILLED TRANSPORT AND EQUIPMENT OPERATORS 721 Contractors and Supervisors, Trades and Related Workers 722 Supervisors, Railway and Motor Transportation Occupations 723 Machinists and Related Occupations 724 Electrical Trades and Telecommunication Occupations 725 Plumbers, Pipefitters and Gas Fitters 726 Metal Forming, Shaping and Erecting Occupations 727 Carpenters and Cabinetmakers 728 Masonry and Plastering Trades 729 Other Construction Trades 731 Machinery and Transportation Equipment Mechanics (except Motor Vehicle) 732 Motor Vehicle Mechanics 733 Other Mechanics 734 Upholsterers, Tailors, Shoe Repairers, Jewellers and Related Occupations 735 Stationary Engineers and Power Station and System Operators 736 Train Crew Operating Occupations 737 Crane Operators, Drillers and Blasters 738 Printing Press Operators, Commercial Divers and Other Trades and Related Occupations, n.e.c.	**Major Group 82** SKILLED OCCUPATIONS IN PRIMARY INDUSTRY 821 Supervisors, Logging and Forestry 822 Supervisors, Mining, Oil and Gas 823 Underground Miners, Oil and Gas Drillers and Related Workers 824 Logging Machine Operators 825 Contractors, Operators and Supervisors in Agriculture, Horticulture and Aquaculture 826 Fishing Vessel Masters and Skippers and Fishermen/women	**Major Group 92** PROCESSING, MANUFACTURING AND UTILITIES SUPERVISORS AND SKILLED OPERATORS 921 Supervisors, Processing Occupations 922 Supervisors, Assembly and Fabrication 923 Central Control and Process Operators in Manufacturing and Processing
SKILL LEVEL C	**Major Group 14** CLERICAL OCCUPATIONS 141 Clerical Occupations, General Office Skills 142 Office Equipment Operators 143 Finance and Insurance Clerks 144 Administrative Support Clerks 145 Library, Correspondence and Related Information Clerks 146 Mail and Message Distribution Occupations 147 Recording, Scheduling and Distributing Occupations		**Major Group 34** ASSISTING OCCUPATIONS IN SUPPORT OF HEALTH SERVICES 341 Assisting Occupations in Support of Health Services			**Major Group 64** INTERMEDIATE SALES AND SERVICE OCCUPATIONS 641 Sales Representatives, Wholesale Trade 642 Retail Salespersons and Sales Clerks 643 Occupations in Travel and Accommodation 644 Tour and Recreational Guides and Amusement Occupations 645 Occupations in Food and Beverage Service 646 Other Occupations in Protective Service 647 Childcare and Home Support Workers 648 Other Occupations in Personal Service	**Major Group 74** INTERMEDIATE OCCUPATIONS IN TRANSPORT, EQUIPMENT OPERATION, INSTALLATION AND MAINTENANCE 741 Motor Vehicle and Transit Drivers 742 Heavy Equipment Operators 743 Other Transport Equipment Operators and Related Workers 744 Other Installers, Repairers and Servicers 745 Longshore Workers and Material Handlers	**Major Group 84** INTERMEDIATE OCCUPATIONS IN PRIMARY INDUSTRY 841 Mine Service Workers and Operators in Oil and Gas Drilling 842 Logging and Forestry Workers 843 Agriculture and Horticulture Workers 844 Other Fishing and Trapping Occupations	**Major Group 94/95** PROCESSING AND MANUFACTURING MACHINE OPERATORS AND ASSEMBLERS 941 Machine Operators and Related Workers in Metal and Mineral Products Processing 942 Machine Operators and Related Workers in Chemical, Plastic and Rubber Processing 943 Machine Operators and Related Workers in Pulp and Paper Production and Wood Processing 944 Machine Operators and Related Workers in Textile Processing 945 Machine Operators and Related Workers in Fabric, Fur and Leather Products Manufacturing 946 Machine Operators and Related Workers in Food, Beverage and Tobacco Processing 947 Printing Machine Operators and Related Occupations 948 Mechanical, Electrical and Electronics Assemblers 949 Other Assembly and Related Occupations 951 Machining, Metalworking, Woodworking and Related Machine Operators
SKILL LEVEL D						**Major Group 66** ELEMENTAL SALES AND SERVICE OCCUPATIONS 661 Cashiers 662 Other Sales and Related Occupations 663 Elemental Medical and Hospital Assistants 664 Food Counter Attendants and Kitchen Helpers 665 Security Guards and Related Occupations 666 Cleaners 667 Other Attendants in Travel, Accommodation and Recreation 668 Other Elemental Service Occupations	**Major Group 75** TRADES HELPERS, CONSTRUCTION LABOURERS AND RELATED OCCUPATIONS 761 Trades Helpers and Labourers 762 Public Works and Other Labourers, n.e.c.	**Major Group 86** LABOURERS IN PRIMARY INDUSTRY 861 Primary Production Labourers	**Major Group 96** LABOURERS IN PROCESSING, MANUFACTURING AND UTILITIES 961 Labourers in Processing, Manufacturing and Utilities

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MATRICE DE LA CLASSIFICATION NATIONALE DES PROFESSIONS

La matrice de la Classification nationale des professions (CNP) présente une vue d'ensemble de la nouvelle classification au niveau des sous-groupes. Elle illustre également la possibilité d'utiliser la CNP en se basant sur le niveau de compétences, sur le genre de compétences ou sur une combinaison de ces deux critères. Les quatre catégories de niveau de compétences sont énumérées verticalement sur le côté gauche de la matrice tandis que les neuf catégories de genres de compétences sont énumérées horizontalement en haut de la matrice. Le dixième catégorie de genres de compétences (0 Gestion) se retrouve aussi sur la haut de la matrice. Dans la plupart des cas, chaque cellule de la matrice représente un grand groupe.

	1 AFFAIRES, FINANCE ET ADMINISTRATION	2 SCIENCES NATURELLES ET APPLIQUÉES ET PROFESSIONS APPARENTÉES	3 SECTEUR DE LA SANTÉ	4 SCIENCES SOCIALES, ENSEIGNEMENT, ADMINISTRATION PUBLIQUE ET RELIGION	5 ARTS, CULTURE, SPORTS ET LOISIRS	6 VENTE ET SERVICES	7 MÉTIERS, TRANSPORT ET MACHINERIE	8 SECTEUR PRIMAIRE	9 TRANSFORMATION, FABRICATION ET SERVICES D'UTILITÉ PUBLIQUE
0 GESTION				Grand groupe 00 CADRES SUPÉRIEURS/CADRES SUPÉRIEURES 001 Membres des corps législatifs et cadres supérieurs/cadres supérieures					
	011 Directeurs/directrices des services administratifs 012 Directeurs/directrices des services financiers et des services aux entreprises 013 Directeurs/directrices des services de communications (sauf la radiodiffusion)	021 Directeurs/directrices des services de génie, d'architecture, de sciences naturelles et des systèmes informatisés	031 Directeurs/directrices des secteurs de la santé, de l'enseignement et des services communautaires et sociaux 041 Directeurs/directrices de l'administration publique		051 Directeurs/directrices des arts, de la culture, des sports et des loisirs	061 Directeurs/directrices des ventes, du marketing et de la publicité	071 Directeurs/directrices de la construction et du transport 072 Directeurs/directrices de l'exploitation et de l'entretien d'immeubles	081 Directeurs/directrices de la production primaire (sauf l'agriculture)	091 Directeurs/directrices de la fabrication et des services d'utilité publique
NIVEAU DE COMPÉTENCES A	Grand groupe 11 PERSONNEL PROFESSIONNEL EN GESTION DES AFFAIRES ET EN FINANCE 111 Professionnels/professionnelles en finance, en vérification et en comptabilité 112 Professionnels/professionnelles en gestion des ressources humaines et en services aux entreprises	Grand groupe 21 PERSONNEL PROFESSIONNEL DES SCIENCES NATURELLES ET APPLIQUÉES 211 Professionnels/professionnelles des sciences physiques 212 Professionnels/professionnelles des sciences de la vie 213 Professionnels/professionnelles en génie civil, mécanique, électrique et chimique 214 Autres professionnels/professionnelles en génie 215 Professionnels/professionnels en architecture, en urbanisme et en aspentrage 216 Professionnels/professionnels en mathématiques et en informatique	Grand groupe 31 PERSONNEL PROFESSIONNEL DES SOINS DE SANTÉ 311 Médecins, dentistes et vétérinaires 312 Optométristes, chiropraticiens/chiropraticiennes et autres professionnels/professionnelles en thérapie et en traitement de la santé 313 Pharmaciens/pharmaciennes, diététistes et nutritionnistes 314 Professionnels/professionnelles en thérapie et en évaluation 315 Professionnels/professionnelles en sciences infirmières	Grand groupe 41 PERSONNEL PROFESSIONNEL DES SCIENCES SOCIALES, DE L'ENSEIGNEMENT, DE L'ADMINISTRATION PUBLIQUE ET DE LA RELIGION 411 Juges, avocats/avocates et notaires (au Québec) 412 Professeurs/professeures et préposeurs/préposeuses adjoints/adjointes professionnels aux niveau universitaire 413 Professeurs/professeures au niveau collégial et instructeurs/instructrices dans les écoles de formation professionnelle 414 Enseignants/enseignantes et conseillers/conseillères pédagogiques aux niveau secondaire et primaire 415 Professionnels/professionnelles en psychologie, en travail social, en counseling et en religion 416 Agents/agentes des politiques et des programmes, recherchistes et experts-conseils/expertes-conseils	Grand groupe 51 PERSONNEL PROFESSIONNEL DES ARTS ET DE LA CULTURE 511 Professionnels/professionnelles des bibliothèques, des archives, des musées et des galeries d'art 512 Professionnels/professionnels de la rédaction et de la traduction et des relations publiques 513 Professionnels/professionnels des arts plastiques et des arts de la scène					
NIVEAU DE COMPÉTENCES B	Grand groupe 12 PERSONNEL SPÉCIALISÉ EN ADMINISTRATION ET EN TRAVAIL DE BUREAU 121 Personnel de supervision du travail de bureau 122 Personnel administratif et de réglementation 123 Personnel d'administration des finances et des assurances 124 Personnel en secrétariat	Grand groupe 22 PERSONNEL TECHNIQUE RELIÉ AUX SCIENCES NATURELLES ET APPLIQUÉES 221 Personnel technique des sciences physiques 222 Personnel technique des sciences de la vie 223 Personnel technique en génie civil, mécanique et industriel 224 Personnel technique en génie électronique et électrique 225 Personnel technique en architecture, en dessin, en cartotage et en cartographie 226 Autres contrôleurs/contrôleuses techniques et officiers/officières de réglementation 227 Officiers/officières et contrôleurs/contrôleuses des services de transport	Grand groupe 32 PERSONNEL TECHNIQUE ET PERSONNEL SPÉCIALISÉ DU SECTEUR DE LA SANTÉ 321 Technologues et technicens/technicennes des sciences de la santé (sauf soins dentaires) 322 Personnel technique en soins dentaires 323 Personnel technique en soins de santé (sauf soins dentaires)	Grand groupe 42 PERSONNEL PARAPROFESSIONNEL DU DROIT, DES SERVICES SOCIAUX, DE L'ENSEIGNEMENT ET DE LA RELIGION 421 Personnel paraprofessionnel du droit, des services sociaux, de l'enseignement et de la religion, n.c.a.	Grand groupe 52 PERSONNEL TECHNIQUE ET PERSONNEL SPÉCIALISÉ DES ARTS, DE LA CULTURE, DES SPORTS ET DES LOISIRS 521 Personnel technique des bibliothèques, des archives, des musées et des galeries d'art 522 Photographes, graphistes et personnel technique du cinéma, de la radiodiffusion et des arts de la scène 523 Annonceurs/annonceures et autres artistes du spectacle 524 Concepteurs/conceptrices artistiques et entraîneurs/entraîneuses 525 Athlètes, entraîneurs/entraîneuses, arbitres et personnel assimilé des sports et des loisirs	Grand groupe 62 PERSONNEL SPÉCIALISÉ DE LA VENTE ET DES SERVICES 621 Personnel de supervision des ventes et des services 622 Personnel technique de la vente en gros 623 Personnel de l'assurance, de l'immobilier et des achats 624 Chefs et cuisiniers/cuisinières 625 Bouchers/bouchères et boulangers/boulangères, vente en gros ou de détail 626 Agents/agentes de police et pompiers/pompières 627 Personnel technique des services personnels	Grand groupe 7373 PERSONNEL DES MÉTIERS ET PERSONNEL SPÉCIALISÉ DANS LA CONDUITE DU MATÉRIEL DE TRANSPORT ET DE LA MACHINERIE 721 Entrepreneurs/entrepreneuses et contremaîtres/contremaîtresses du personnel des métiers et du personnel assimilé 722 Surveillants/surveillantes du personnel des transports ferroviaire et routier 723 Mécaniciens et personnel assimilé 724 Électriciens/électriciennes et monteurs/monteuses de lignes d'électricité et de télécommunications 725 Plombiers/plombières, tuyauteurs/tuyauteuses et monteurs/monteuses d'installations au gaz 726 Personnel du formage, poutrage et montage de métal, n.c.a. 727 Charpentiers/charpentières et ébénistes 728 Personnel de l'ajustement et de poutrage 729 Autres métiers de la construction 730 Mécaniciens/mécaniciennes de machinerie et d'équipement de transport (sauf véhicules automobiles) 731 Mécaniciens/mécaniciennes de véhicules automobiles 732 Autres mécaniciens/mécaniciennes 734 Tapissiers-garnisseurs/tapissières-garnisseuses, tailleurs/ tailleuses, cordonniers/cordonnières, boyaliers/boyalières et personnel assimilé 735 Mécaniciens/mécaniciennes de machines fixes et opérateurs/opératrices de centrales et de réseaux électriques 736 Personnel des opérations du transport ferroviaire 737 Graisseurs/graisseuses, forgerons/forgeronnes et dynamiteurs/dynamiteuses 738 Personnel de l'imprimerie, scapharétiers/scapharétrices, autre personnel des métiers et personnel assimilé, n.c.a.	Grand groupe 82 PERSONNEL SPÉCIALISÉ DU SECTEUR PRIMAIRE 821 Surveillants/surveillantes de l'exploitation forestière 822 Surveillants/surveillantes de l'exploitation des mines, du pétrole et du gaz 823 Personnel du fonçage, des mines souterraines et de la production gazolifère et pétrolière 824 Conducteurs/conductrices de machine d'abattage du bois 825 Entrepreneurs/entrepreneuses, surveillants/surveillantes et exploitants/exploitantes en agriculture, en horticulture et en aquaculture 826 Capitaines et officiers/officières de pêche et pêcheurs/pêcheuses	Grand groupe 92 PERSONNEL DE SUPERVISION ET PERSONNEL SPÉCIALISÉ DANS LA TRANSFORMATION, LA FABRICATION ET LES SERVICES D'UTILITÉ PUBLIQUE 921 Surveillants/surveillantes dans les industries de transformation 922 Surveillants/surveillantes dans la fabrication et le montage 923 Opérateurs spécialisés/opératrices spécialisées de poste central de contrôle dans les procédés de fabrication et de transformation
NIVEAU DE COMPÉTENCES C	Grand groupe 14 PERSONNEL DE BUREAU 141 Commis de travail général de bureau 142 Commis de bibliothèque 143 Commis des finances et de l'assurance 144 Commis de soutien administratif 145 Commis de bibliothèque, de correspondance et de renseignements 146 Commis des services postaux et de messageries 147 Commis à l'expédition et à la distribution		Grand groupe 34 PERSONNEL DE SOUTIEN DES SERVICES DE SANTÉ 341 Personnel de soutien des services de santé			Grand groupe 64 PERSONNEL INTERMÉDIAIRE DE LA VENTE ET DES SERVICES 641 Représentants/représentantes des ventes, ventes en gros 642 Vendeurs/vendeuses et commis-vendeurs/commises-vendeuses 643 Personnel de l'hébergement et des voyages 644 Guides et autre personnel des tours 645 Personnel des services des aliments et boissons 646 Personnel des services de protection 647 Personnel de soutien familial et de garderie 648 Autre personnel des soins personnalisés	Grand groupe 74 PERSONNEL INTERMÉDIAIRE EN TRANSPORT, EN MACHINERIE, EN INSTALLATION ET EN RÉPARATION 741 Conducteurs/conductrices de véhicules automobiles et opérateurs/opératrices de transport en commun 742 Conducteurs/conductrices d'équipement lourd 743 Autres conducteurs/conductrices de matériel de transport et personnel assimilé 744 Personnel d'installation, de réparation et d'entretien 745 Débardeurs/débardeuses et manutentionnaires	Grand groupe 84 PERSONNEL INTERMÉDIAIRE DU SECTEUR PRIMAIRE 841 Personnel d'arbitrage des mises et du forage des puits de pétrole et de gaz 842 Personnel de l'exploitation forestière 843 Personnel en agriculture et en horticulture 844 Personnel de la pêche, de la chasse et du trappage	Grand groupe 9495 PERSONNEL RELIÉ À LA FABRICATION, À LA TRANSFORMATION ET AU MONTAGE 941 Conducteurs/conductrices de machines dans le traitement des métaux et des minéraux et personnel assimilé 942 Conducteurs/conductrices de machines dans le traitement des produits chimiques, du caoutchouc et du plastique et personnel assimilé 943 Conducteurs/conductrices de machines dans la production des pâtes et papiers et dans la transformation du bois et personnel assimilé 944 Conducteurs/conductrices de machines dans la fabrication des produits textiles et personnel assimilé 945 Conducteurs/conducteurs de machines dans la confection d'articles en tissu, en fourrure et en cuir et personnel assimilé 946 Conducteurs/conductrices de machines dans la transformation des aliments, des boissons et du tabac et personnel assimilé 947 Conducteurs/conductrices de machines à imprimer et personnel assimilé 948 Monteurs/monteuses de matériel mécanique, électrique et électronique 949 Autre personnel de montage et personnel assimilé 951 Opérateurs/opératrices de machines dans la tapisserie et l'usinage des métaux et le travail du bois et personnel assimilé
NIVEAU DE COMPÉTENCES D						Grand groupe 66 PERSONNEL ÉLÉMENTAIRE DE LA VENTE ET DES SERVICES 661 Caissiers/caissières 662 Aide-personnel de la vente et personnel assimilé 663 Personnel élémentaire des soins de santé 664 Serveurs/serveuses au comptoir et aides-cuisiniers/aides-cuisinières 665 Gardiens/gardiennes de sécurité et personnel assimilé 666 Nettoyeurs/nettoyeuses 667 Aide-personnel des services de voyage, d'hébergement et de loisirs 668 Personnel élémentaire des services personnels	Grand groupe 76 PERSONNEL DE SOUTIEN DES MÉTIERS, MANŒUVRES ET AIDES D'ENTREPRISE EN CONSTRUCTION ET AUTRE PERSONNEL ASSIMILÉ 761 Aides de services des métiers et manœuvres en construction 762 Manœuvres aux travaux publics et personnel assimilé, n.c.a.	Grand groupe 86 PERSONNEL ÉLÉMENTAIRE DU SECTEUR PRIMAIRE 861 Personnel élémentaire de la production primaire	Grand groupe 96 PERSONNEL ÉLÉMENTAIRE DANS LA TRANSFORMATION, LA FABRICATION ET LES SERVICES D'UTILITÉ PUBLIQUE 961 Manœuvres dans la transformation, la fabrication et les services d'utilité publique



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